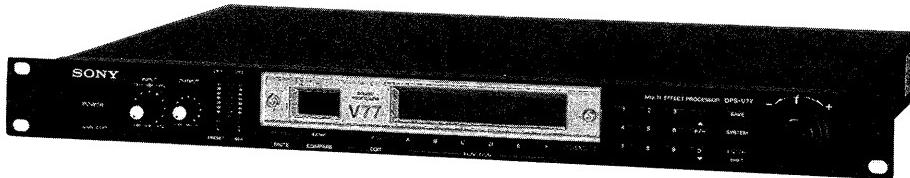


DPS-V77

SERVICE MANUAL

US Model
Canadian Model
AEP Model
Australian Model



SPECIFICATIONS

A/D Converter 1 Bit / 64 times oversampling (24 bit resolution)

D/A Converter Advanced PULSE D/A converter (20 bit resolution)

Sampling Frequency Analog input 48 kHz
Digital input 44.1/48 kHz (auto-switching)

Analog Input

Jack type	reference input level	maximum input level	input impedance	circuit type
XLR-3-31	+4 dBs	+21 dBs	20 kilohms	balanced
PHONE	-20 dBs or +4 dBs	-2 dBs or +21 dBs	50 kilohms	unbalanced

0 dBs = 0.775 Vrms

XLR-3-31 connectors (1 : GND 2 : HOT 3 : COLD)

Analog Output

Jack type	reference output level	maximum output level	load impedance	circuit type
XLR-3-32	+4 dBs	+21 dBs	600 ohms or more	balanced
PHONE	-20 dBs or +4 dBs	-2 dBs or +21 dBs	10 kilohms or more	unbalanced

0 dBs = 0.775 Vrms

XLR-3-32 connectors (1 : GND 2 : HOT 3 : COLD)

Digital Input/Output Terminal type: 8 pin mini DIN
Use optional cables RK-V77A (for AES/EBU) or
RK-V77S (for SPDIF)

Pedal Input Terminal type: Standard PHONE type
(assignable control terminals x 2)

MIDI Input/Output Jack: 5 pin DIN (IN x 1, OUT/THRU x 1)
OUT/THRU can be set to either OUT or THRU

Frequency Response 10 – 22 kHz +0, -1.0 dB

Signal-to-Noise Ratio Greater than 97 dB

Dynamic Range Greater than 97 dB

Distortion Less than 0.003% (1 kHz)

Memory Preset 198 locations (99 location preset bank x 2)
User 198 locations (99 location user bank x 2)

Power Source AC 120 V, 60 Hz
AC 230 V, 50/60 Hz

Power Consumption 23 W (120 V)
25 W (230 V)

Dimensions 482 x 44 x 320mm (WxHxD not including projections)

Mass approx. 4.7 kg

Design and specifications subject to change without notice.

MULTI-EFFECT PROCESSOR
SONY®



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CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

ADVARSEL !

Lithiumbatteri-Ekspløsionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Lever det brugte batteri tilbage til leverandøren.

ADVARSEL

Ekspløsionsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende
type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens
instruksjoner.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en likvärdig typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt gällande föreskrifter.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

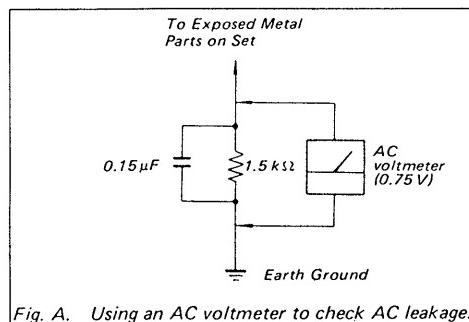


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

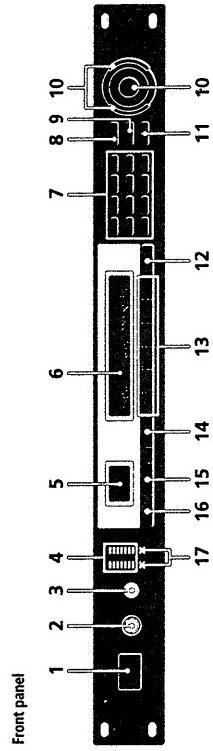
COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

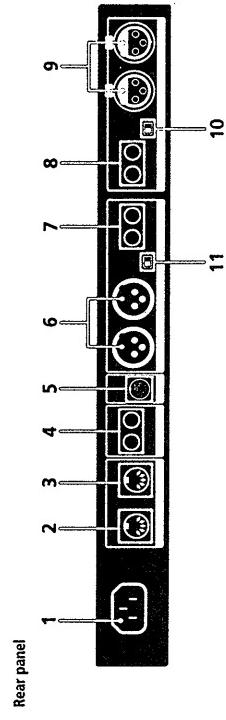
LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

Getting Started

Names and Functions of Parts



Names and Functions of Parts



Names and Functions of Parts

- 1 POWER ON/OFF switch**
Press this switch to turn the power on and off. Turning on the power on recalls the last used memorized effect and activates play mode automatically.
- 2 INPUT level adjustment knob**
Turn the knob to the left or right to adjust the input level. Adjustments can be made independently for each channel. The outer knob to adjusts channel 1 (CH 1) and the inner knob adjusts channel 2 (CH 2) (page 14).
- 3 OUTPUT level adjustment knob**
Turn to the left or right to adjust the output level from the output jacks.
- 4 Input level meter**
Indicates the strength of the input signal from -36 dB to CLIP (overload) with green, orange, and red indicators (page 14).
- 5 Memory number display window**
Displays the memory number of current effect. 99 different effects are stored in each of the PRESET memory banks and up to 99 effects can be stored in each of the USER memory banks.
- 6 Multi display**
Displays various information, such as the name of the currently selected effect, parameter values, and messages.
- 7 Number buttons**
Use these buttons to recall effects from the currently chosen memory bank directly and input exact parameter values (page 14). Use ▲ or ▼ while holding down ENTER/SHIFT to make incremental adjustments to parameter values (page 14).
- 8 SAVE button**
Use this button after changing parameter values to save a custom effect in one of the USER memory banks (page 22).
- 9 SYSTEM button**
Use this button to access the system menus and customize the effecter's operating environment (pages 24 and 25).
- 10 Operation dial/Shuttle ring**
Use to select memory numbers from the currently selected memory bank and make adjustments to parameter settings. The operation dial lets you advance in one-step increments. The jog dial lets you advance rapidly in larger increments. The rate of advance (or value change) changes according to the angle of the shuttle ring.
- 11 ENTER/SHIFT button**
Use this button to enter a memory number or parameter value input with the numeric buttons (page 14). Hold down while pressing the ▲ or ▼ button to make a one-step adjustment to a memory number or a parameter value (page 14).
- 12 EXIT button**
Press after or during a setting procedure to return to the previous screen or mode, or to de-select an active parameter on the play screen.
- 13 FUNCTION A-F buttons**
Use to select the items displayed above the respective buttons.
- 14 EDIT/PAGE button**
Press during Play mode to access the edit screen and make changes to the current effect (page 17). Press to display different pages of multi-page menus (page 17).
- 15 BANK/COMPARE button**
Press to select the memory bank containing the effect you desire (page 14). In edit mode, press to compare alterations in effect parameters to the unaltered effect (page 18).
- 16 BYPASS/MUTE button**
Press to route the signal around the effect processing circuitry so that the signal being input is output unchanged (bypass), or to completely cut output from the effecter (mute) (see page 15).
- 17 Memory bank indicators**
Indicate the currently selected memory bank: PRESET 1, PRESET 2, USER 1, or USER 2 (see page 14).

SECTION 1 GENERAL

This section is extracted from instruction manual.

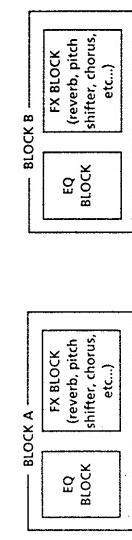
Getting Started

Understanding the Signal Flow

This unit takes in audio signals from two types of input jacks (digital and analog), processes them using various internal blocks, and outputs them through the analog and digital output jacks. To make the most of this unit, it is essential that you have a firm understanding of the audio signal flow. This section provides an explanation of the internal blocks and how they process the input and output audio signals.

Block and structure

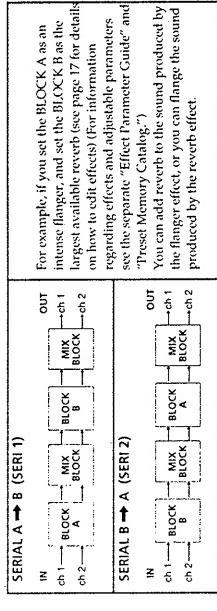
The audio signal processor in this unit is divided into two parts, BLOCK A and BLOCK B. Each of these blocks is composed of an EQ BLOCK and an FX (effect) BLOCK. The EQ BLOCK works as an equalizer. The FX BLOCK contains a large number of multi-effects.



The positioning of the EQ block and the FX block is determined when editing the EQ BLOCK by choosing either "Pre" or "Post" in the Model parameter. In other words, you can choose, independently within BLOCK A and BLOCK B, whether to add the effect to the sound coming from the equalizer, or equalize the sound produced by the effect.

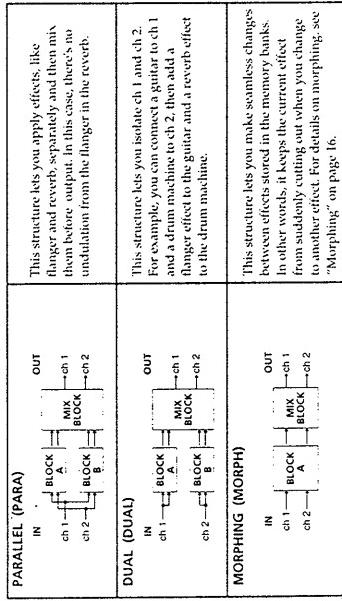


It's also necessary to determine the positions of the larger blocks, BLOCK A and BLOCK B. Their positioning, the way they are connected, is called the "structure." Set the structure according to the kind of sound you want to make. The structure screen not only lets you choose the structure type (see the following chart), but also lets you adjust the output level for each block (represented in the chart by the MIX BLOCK).



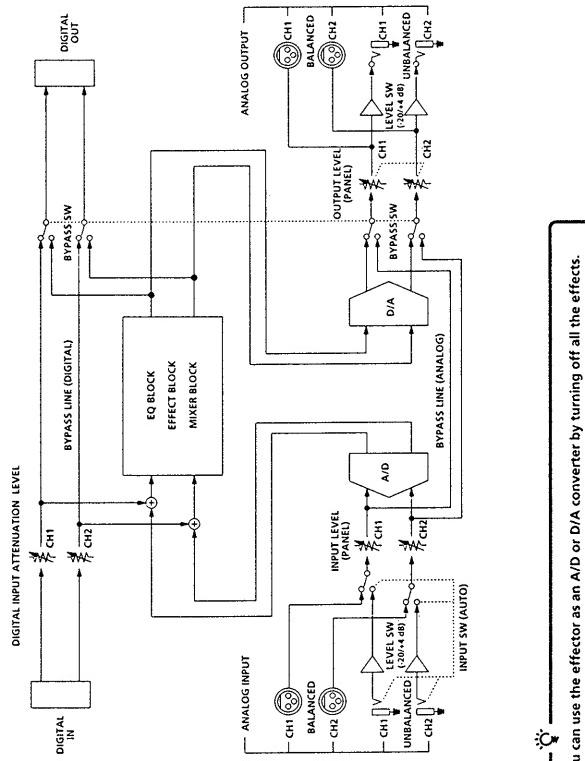
For example, if you set the BLOCK A as an intense flanger, and set the BLOCK B as the largest available reverb (see page 17 for details on how to edit effects). For information regarding effects and adjustable parameters see the separate "Effect Parameter Guide" and "Effect Memory Catalog."

You can add reverb to the sound produced by the flanger effect, or you can flange the sound produced by the reverb effect.



Setting the INPUT/OUTPUT levels

This chart shows the overall signal flow relationship between this unit's inputs and outputs. The following information is an overview of all you need to know regarding this unit's inputs and outputs.



You can use the effector as an A/D or D/A converter by turning off all the effects.

Getting Started

Analog IN/OUT and digital IN/OUT

This unit is provided with both analog and digital inputs and outputs, and you can use both of them at the same time. The input block in the SYSTEM: Setup menu lets you determine whether to use the analog, the digital, or both the analog and the digital INPUT/OUTPUT jacks.

Analog INPUT priority

This unit is provided with both PHONE and XLR type analog INPUT and OUTPUT jacks. Although the signal is always output from both the PHONE and XLR jacks, the PHONE jacks are given priority for the input signal. When the PHONE and XLR INPUT jacks are used at the same time, the XLR signal is automatically cut.

Emphasis

Some older CDs have "emphasized" high frequency sounds. When outputting an analog signal from an "emphasized" digital source, it is necessary to "de-emphasize" the high frequency sounds and bring them back to their original levels. The [f]input block in the SYSTEM: Setup menu lets you determine whether de-emphasis will be carried out automatically, or manually.

Adjusting the INPUT/OUTPUT levels (to prevent clipping)

The numbers on the level meter show, in decibels, how much room is left before the INPUT signal reaches the clip point. If the input signal exceeds the clip point (+12 dB), clip noise breaks out. This unit's effect processor incorporates a +12 dB leeway. Therefore, even if you raise the signal level to +12 dB, with the EQ block for example, the internal processor will not clip the signal. It is necessary, however, to reduce levels over 0 dB before they are output. To adjust the effect level, choose [Mixer] in the EDIT mode. See "Changing the effect parameters" on page 17 to edit an effect.



Even though you can decrease levels in the mixer block, the most important factor in preserving sound quality is the input level. The following is a general guideline for adjusting the input level, but your eyes and ears are ultimately the most useful tools in determining and maintaining the appropriate input level.

→ See "Setting the DIGITAL IN/OUT" on page 13.

→ See "Names and Functions of Parts" on page 7.

→ See "Setting the DIGITAL IN/OUT" on page 13.

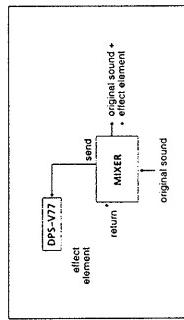
Bypass and Mute

The bypass function outputs the sound of the signal originally input into the effector without adding any effects. Pressing the bypass button turns the bypass function on and off. "Mute" is also available as a form of bypass. When the BYPASS button is set to mute, the sound of the originally signal is cut in addition to the sound of the effects. Therefore, no sound comes from the unit. You can set BYPASS button to operate as either "Mute" or "Bypass" in the SYSTEM: Setup menu.

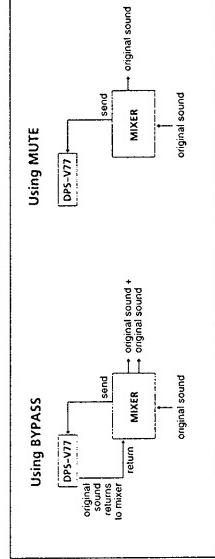
- See "Names and Functions of Parts" on page 6.
- See "Outputting Without Effects (BYPASS/MUTE)" on page 15 to set the bypass mode.

Muting the sound is more than just turning the volume to "0." It is designed to prevent sound from returning to the mixer when the unit is connected in a send-return loop with a mixer. Ideally, when this unit is connected to a mixer, the sound of the input signal should not be output from this unit; only the sound of the effects should be output (see "Cutting the Direct Sound (Dry On/Off)" on page 25). In this situation, however, using bypass only cuts the sound of the effects, and the sound input into the effector goes back to the mixer, producing a double signal. Using mute prevents the sound input into the effector from returning to the mixer and insures that only the sound generated from the original source (guitar, keyboard, etc.) reaches the mixer. In other words, it is the same as bypass.

When using effects



When NOT using effects



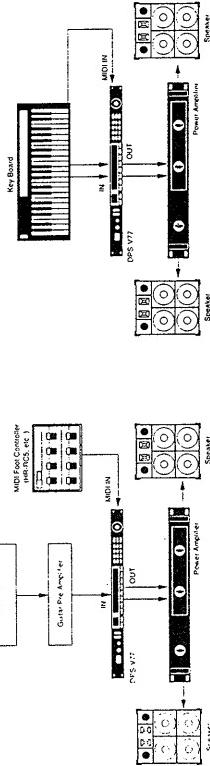
INPUT jacks	Signal	level meter reading
Digital (with the digital attenuator set to 0 dB)	0 dB digital (full swing)	0 dB
Analog (+4 dB) BALANCED or UNBALANCED (with the front panel INPUT knob set to 0 dB)	+21 dB signal + 4 dB signal	0 dB -17 dB
Analog (-20 dB) UNBALANCED (with the front panel INPUT knob set to 0 dB)	-2 dB signal - 20 dB signal	0 dB -18 dB

Hooking Up

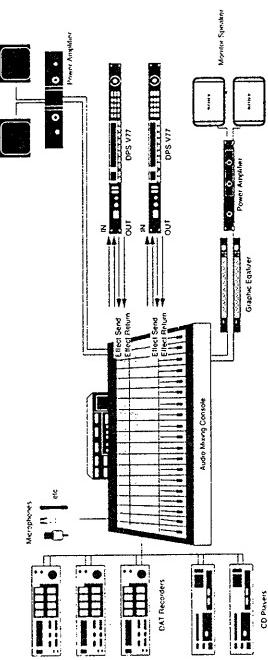
Basic Hookups

- Before connecting this unit to another device, be sure to unplug the AC power cord from the power outlet.
- Turn off the power switch on this unit and all components to be connected, such as keyboards and active speakers (speakers with built-in amplifiers).
- After all the connections, double check that the connections are correct before plugging the AC power cord back into the power outlet.
- If the connected components output large signals that cause distortion, adjust the INPUT knob on this unit to lower the input level, or lower the output level of the connected component.

Example 1: Hooking up to an instrument



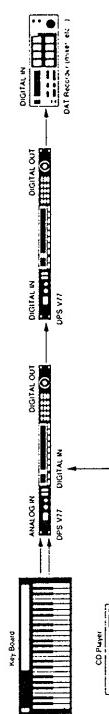
Example 2: Hooking up to a mixer (cutting the direct sound)



- When using the effector in a send-return loop
 - We recommend setting the direct output level to ∞ (minimally infinity). (See "Cutting the Direct Sound (Dry On/Off)" on page 25.)
 - We also recommend setting the BYPASS function to MUTE (as shown on page 15).

Digital Hookups

By taking advantage of the DPS-V77's DIGITAL I/O connectors, you can make digital recordings on DAT recorders, input digital signals from CD, and make digital connections to mixers (see page 29).



Example 1: Digital I/O connection

You can select analog (ANA1/C), digital (DIGITAL), or both analog and digital (Both) jacks for input and output.

5 Press FUNCTION B [ChSel] and use the operation dial to select the input channel(s).

To use both CH1 and CH2, choose stereo (STEREO). To use only CH1, choose monaural 1 (MONO 1). To use only CH2, choose monaural 2 (MONO 2). These setting can also be made when using the analog inputs.

6 Press FUNCTION C [Att 1] or D [Att 2] and use the operation dial to adjust the digital input levels.

[Att 1] lets you adjust the digital input level for CH 1. [Att 2] lets you adjust the digital input level for CH 2. Press FUNCTION C or D twice to link the parameters and adjust both digital input levels at the same time.

7 Press FUNCTION E [EMPH] and use the operation dial to select the de-emphasis mode.

"Auto" activates de-emphasis automatically according to the type of digital signal being input. "On" de-emphasizes all signals input through the DIGITAL I/O Jack. "Off" turns de-emphasis off and does not alter signals input through the DIGITAL I/O jack.

See page 10 for details on the emphasis function.

Note
This unit's digital input only accepts signals with either 44.1 kHz or 48 kHz sampling frequencies. It cannot be used with 32 kHz signals.

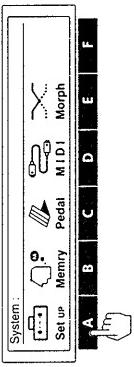
Setting the Digital I/O

To obtain the best possible sound quality when using the DIGITAL I/O jack, we recommend setting the input mode to digital, instead of both (Digital and analog).

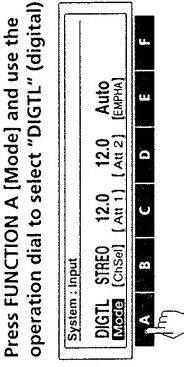
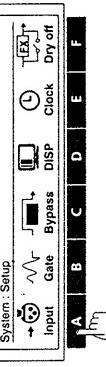
The following steps show you how to set the input mode, adjust the digital input level, and select the "de-emphasis" mode. Refer to "Understanding the Signal Flow" on page 8 for details regarding the digital signal flow. Also, see "Input Settings and the Input Signals" and "Digital I/O Terminal Chart" on page 29 for additional information.

1 Press SYSTEM.

2 Press FUNCTION A to choose "Set Up."



3 Press FUNCTION A to choose "Input."



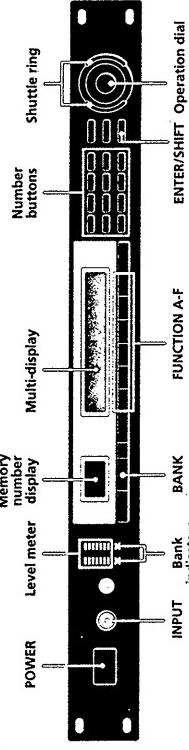
4 Press FUNCTION A [Mode] and use the operation dial to select "DIGTL" (digital).



Choosing an Effect

Recalling Effects from the Memory

The effector comes with 198 different effects stored in the preset memory as well as a 198 effect memory capacity for storing the effects you create.

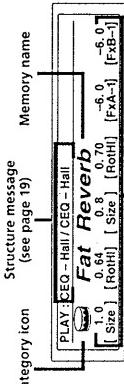


1 Press POWER to turn on the power.

The PLAY screen is displayed.

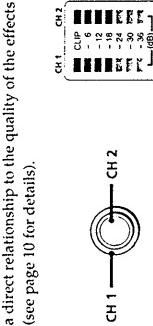
2 Turn INPUT to adjust the analog input levels (for digital levels, see page 13).

If the CLIP indicators light, the input level is set too high. Be sure to set the input level correctly since it has a direct relationship to the quality of the effects (see page 10 for details).



3 Press BANK to select the memory bank containing the effect you want (PRESET / USER 1 or 2).

Only the bottom indicator lights for PRESET or USER bank 1. Both the top and bottom indicators light for PRESET or USER bank 2.



4 Press BANK to select the memory bank containing the effect you want (PRESET / USER 1 or 2).

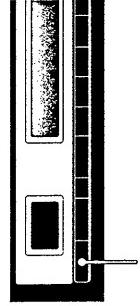
Both the top and bottom indicator lights for PRESET or USER bank 1. Only the bottom indicator lights for PRESET or USER bank 2.



PRESET banks 1 and 2 hold preset effects. USER banks 1 and 2 are for user memory.

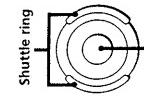
Outputting Without Effects (BYPASS/MUTE)

The effector comes with two different bypass modes: Bypass and Mute. Therefore, you can use the BYPASS button to cut output of the original sound or to output the original sound without effects depending on which bypass mode you select. Once you set the BYPASS mode, just press BYPASS to activate Bypass or Mute. Press again to cancel the bypass or mute.



4 Select the effect you desire (1-99).

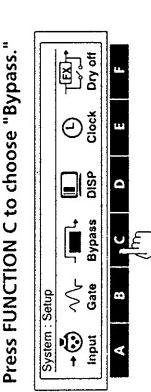
To select effects using the operation dial/shuttle ring, rotate the dial or ring to display the number of the effect you desire.



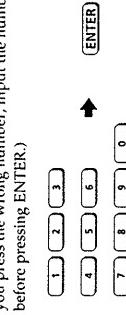
1 Press SYSTEM.

2 Press FUNCTION A to choose "Set Up."

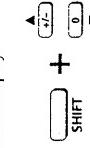
3 Press FUNCTION C to choose "Bypass."



To select effects using the number buttons, input the number of the effect you want, then press ENTER. (If you press the wrong number, input the number again before pressing ENTER.)



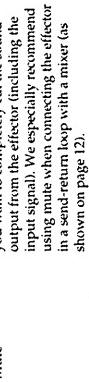
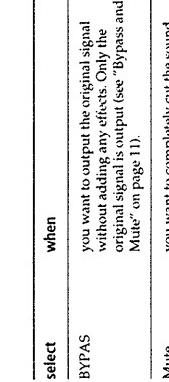
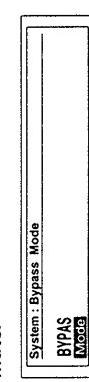
To select effects using the arrow buttons, hold down SHIFT and press either ▲ or ▼ until the number you desire appears in the display.



Before you turn on the connected components
Be sure to turn the volume level down to avoid an unexpected output of massive volume.

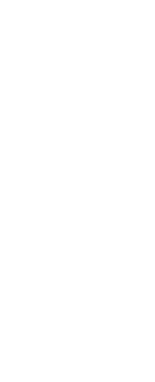
To change effect parameters from the PLAY screen
See "Editing in PLAY Mode (direct edit)" on page 20.

4 Use the operation dial to select BYPASS or Mute.



Press EXIT a few times to return to the PLAY screen.

you want to completely cut the sound output from the effector (including the input signal). We especially recommend using mute when connecting the effector in a send-return loop with a mixer (as shown on page 12).



Choosing an Effect

Morphing

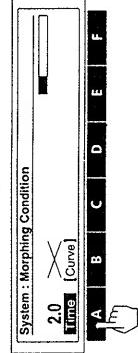
When the structure is set to [MORPH] (see page 8 for details on the system structure, see page 19 to change the structure), the effector creates a seamless change between effects when you switch to other memory numbers whose structures are also set to [MORPH].

Note

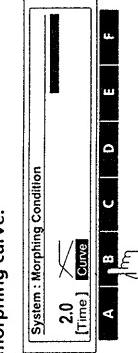
The effector does not respond to any commands (including MIDI) during the morphing process. It will not respond until the preset morphing time has elapsed (see below).

- 3 Press FUNCTION A [Time] and use the operation dial to set the morphing time.**

The morphing time is the length of time from the beginning to the end of the morphing process. The effector will not respond to any commands (including MIDI) during this period.



- 4 Press FUNCTION B [Curve] to select the morphing curve.**



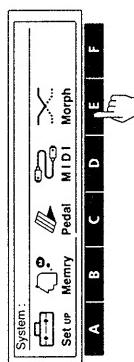
Provides a gradual transition to the next sound. Brings the next sound in quickly while the first sound fades out.

Note
You cannot set the morphing time and curve independently for each effect.

- 3 Press SYSTEM.**

The morphing time is the length of time from the beginning to the end of the morphing process. The effector will not respond to any commands (including MIDI) during this period.

- 2 Press FUNCTION E to select "Morph."**

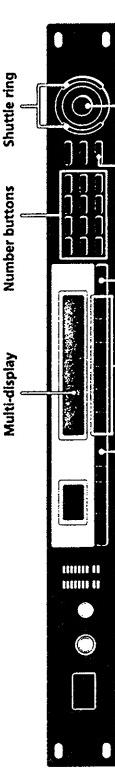


∞

Processing Effects (EDIT)

Changing Effect Parameters

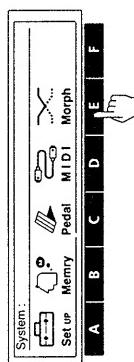
The effector comes with 198 different effects stored in the preset memory as well as a 198 effect memory capacity for storing the effects you create by altering parameter values.



Setting the morphing time and curve

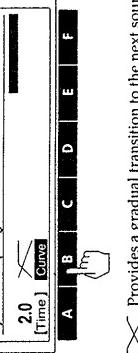
- 1 Press SYSTEM.**

- 2 Press FUNCTION E to select "Morph."**



∞

- 4 Press FUNCTION B [Curve] to select the morphing curve.**

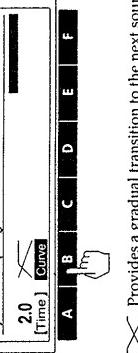


Provides a gradual transition to the next sound. Brings the next sound in quickly while the first sound fades out.

- 3 Press FUNCTION A [Time] and use the operation dial to set the morphing time.**

The morphing time is the length of time from the beginning to the end of the morphing process. The effector will not respond to any commands (including MIDI) during this period.

- 4 Press FUNCTION B [Curve] to choose the block you want to change.**



The screen for the chosen block appears in the display. For example, pressing FUNCTION A selects "EQ A" and the EDIT : EQ screen appears (the example below shows a shelving equalizer).

- 2 Press EDIT/PAGE.**



Current page

The EDIT : SELECT screen appears in the display. Page numbers

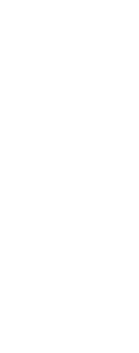


Current page

The numbers in the upper right corner of the display indicate the number of pages (basic screens) in the current block. The number in the black square indicates the current page.

Press EDIT / PAGE again to switch to the next page. Press EDIT / PAGE while holding down ENTER / SHIFT to page backwards.

- 3 Use the FUNCTION buttons (A-F) to choose the block you want to change.**



Current page

- The screen for the chosen block appears in the display. For example, pressing FUNCTION A selects "EQ A" and the EDIT : EQ screen appears (the example below shows a shelving equalizer).

- 4 Use the FUNCTION buttons (A-F) to select the parameter you want to change.**



Current page

The numbers in the upper right corner of the display indicate the number of pages (basic screens) in the current block. The number in the black square indicates the current page.

Press EDIT / PAGE again to switch to the next page. Press EDIT / PAGE while holding down ENTER / SHIFT to page backwards.

(Continued)

Processing Effects (EDIT)

Convenient Ways to Edit

To change the same parameter for CH1 and CH2 at the same time (LINK)

Press the FUNCTION button for the parameter you want to change twice. The characters for the other channel's parameters also reverse twice. You can adjust both parameters at the same time.

Tapping in a parameter setting (Tap Tempo)

Certain parameters, like Delay Time, can be set by tapping on the ENTER button. After choosing the parameter you want to set, press the ENTER button repeatedly to tap in the tempo you desire. The processor measures the timing of the last two taps and sets the parameter accordingly. This function can only be used with parameters whose parameter name display is followed by an asterisk (*).

Comparing Effect Parameters

Press BANK/COMPARE while editing an effect to compare the sound of the current parameter settings with the sound of the original, undefined effect.

Press BANK/COMPARE or EXIT to return to the current parameter settings.

Copying Effect Parameters

In EDIT mode, you can copy the parameter settings from an effect block in a given USER or PRESET memory to the same kind of effect block in the current USER memory. For example, you can copy the EQA parameter settings from another USER (or PRESET) memory number into the EQA (or EQB) block of the USER memory number you are currently editing.

1 Follow steps 1 through 3 on the previous page to select the block (eg. EQA) you want to copy to.

2 Press FUNCTION A [Type] twice. Confirmation for entering the "parameter copy" screen appears in the display. (Pressing [Type] twice during another edit operation will also activate this function.)

Press FUNCTION F [YES] to proceed.

3 Use FUNCTION button A [MEM#] to select the memory number you want to copy from.

4 Use FUNCTION button B or C to select the effect block you want to copy the parameters from.

5 Press FUNCTION F [EXEC] to copy the parameter settings from the effect block you selected in step 4.

To copy an entire effect, see page 23.

Changing the Structure

The effector contains two main effect blocks which perform signal processing to add effects to the incoming signals. You can produce different sounds by changing the structure (configuration) of these two blocks (see page 8 for details).



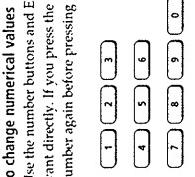
Shuttle ring

Operation dial

+

-

ENTER



1 2 3
4 5 6
7 8 9 0

To change numerical values Use the number buttons and ENTER to input the value you want directly. If you press the wrong number, input the number again before pressing ENTER.

9

Convenient Ways to Edit

To change the same parameter for CH1 and CH2 at the same time (LINK)

Press the FUNCTION button for the parameter you want to change twice. The characters for the other channel's parameters also reverse twice. You can adjust both parameters at the same time.

Tapping in a parameter setting (Tap Tempo)

Certain parameters, like Delay Time, can be set by tapping on the ENTER button. After choosing the parameter you want to set, press the ENTER button repeatedly to tap in the tempo you desire. The processor measures the timing of the last two taps and sets the parameter accordingly. This function can only be used with parameters whose parameter name display is followed by an asterisk (*).

Comparing Effect Parameters

Press BANK/COMPARE while editing an effect to compare the sound of the current parameter settings with the sound of the original, undefined effect.

Press BANK/COMPARE or EXIT to return to the current parameter settings.

Copying Effect Parameters

In EDIT mode, you can copy the parameter settings from an effect block in a given USER or PRESET memory to the same kind of effect block in the current USER memory. For example, you can copy the EQA parameter settings from another USER (or PRESET) memory number into the EQA (or EQB) block of the USER memory number you are currently editing.

1 Follow steps 1 through 3 on the previous page to select the block (eg. EQA) you want to copy to.

2 Press FUNCTION A [Type] twice. Confirmation for entering the "parameter copy" screen appears in the display. (Pressing [Type] twice during another edit operation will also activate this function.)

Press FUNCTION F [YES] to proceed.

3 Use FUNCTION button A [MEM#] to select the memory number you want to copy from.

4 Use FUNCTION button B or C to select the effect block you want to copy the parameters from.

5 Press FUNCTION F [EXEC] to copy the parameter settings from the effect block you selected in step 4.

To copy an entire effect, see page 23.

Changing the Structure

The effector contains two main effect blocks which perform signal processing to add effects to the incoming signals. You can produce different sounds by changing the structure (configuration) of these two blocks (see page 8 for details).



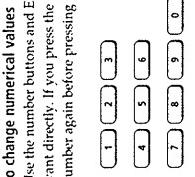
Shuttle ring

Operation dial

+

-

ENTER

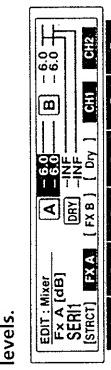


1 2 3
4 5 6
7 8 9 0

To change numerical values Use the number buttons and ENTER to input the value you want directly. If you press the wrong number, input the number again before pressing ENTER.

9

6 Use FUNCTION B [FX A], C [FX B], or D [Dry], if you want to change the output levels.



Press FUNCTION E or F after choosing FX A, FX B, or Dry to adjust the levels for each channel independently.

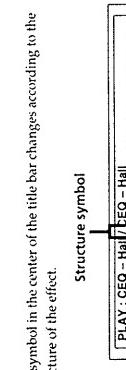
7 Turn the operation dial to choose the setting you desire.

See page 10 for additional information regarding the output levels.

8 Press SAVE to store the new structure settings (see page 22).

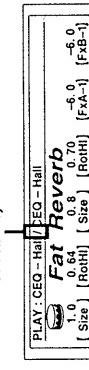
Press EXIT a few times to return to the play screen.

Checking the Structure in PLAY Mode



The symbol in the center of the title bar changes according to the structure of the effect.

Structure symbol



Effect names dimmed in the PLAY bar are effects that are currently set to [OFF].

9 Turn the operation dial to choose the structure you desire.

SERI 1 (serial 1) FX A → FX B

SERI 2 (serial 2) FX B → FX A

PARA (parallel) FX A + FX B

DUAL (dual) FX A (ch 1) + FX B (ch 2)

No Block B MOPH (morphing) FX A → next memory

See pages 8 and 9 for descriptions of each structure.

Processing Effects (EDIT)

• Editing in PLAY Mode (direct edit)

With direct edit you can edit up to 6 different parameters directly from the PLAY screen. These parameters are called Active Parameters. The following steps show you how to edit from the play screen one you've designated the Active Parameters. To designate Active Parameters, see "Selecting the Active Parameters" below.

- Editing in PLAY Mode (direct edit)**

With direct edit you can edit up to 6 different parameters directly from the PLAY screen. These parameters are called Active Parameters. The following steps show you how to edit from the play screen once you've designated the Active Parameters. To designate Active Parameters, see "Selecting the Active Parameters" below.

1 Choose an effect from the memory banks.

The parameters available for direct editing (Active Parameters) appear directly above their corresponding FUNCTION button.

Effect

PLAY : CEO - Hall / CEO - Hall

Fat Reverb

1.0 [Size] [Reverb]

0.64 [Size] [Reverb]

0.8 [Size] [Reverb]

0.70 [Size] [Reverb]

0.60 [Size] [Reverb]

[fx-B-1] [fx-B-1]

[fx-B-0] [fx-B-0]

Active parameters

2 Press the FUNCTION button (A-F) of the parameter you want to adjust.

To adjust parameters not displayed in the PLAY screen, see "Changing Effect Parameters" on page 17.

3 Use the operation dial or shuttle ring to adjust the parameter.

When changing numerical values, you can use the number buttons to input the value directly, or hold SHIFT and press ▲ or ▼ to change the value one unit at a time.

4 Press a FUNCTION button (A-F) to choose location (1-6).

Active P1/Active P6 correspond to FUNCTION button A-F respectively. (e.g., FUNCTION B is used to select Active P2 from the PLAY screen.)

5 Press FUNCTION A [Block] and use the operation dial to select the effect block containing the parameter you want to appear on the PLAY screen.

6 Press FUNCTION B [PARAM] and use the operation dial to select the parameter that will appear on the PLAY screen.

2 Press PAGE/EDIT twice.

3 Press FUNCTION B to choose "Active P."

PAGE : 1/2

EDIT SELECT :

RIC Active P

—0—

A B C D E F

4 Press a FUNCTION button (A-F) to choose location (1-6).

PAGE : 1/2

EDIT SELECT :

RIC Active P

—0—

A B C D E F

5 Press PAGE/EDIT twice.

6 Press PAGE/EDIT twice.

Setting the Real Time Control (RTC)

By using MIDI controls, such as dampers and modulation wheels, you can control various characteristics of an effect in real time. Since condition controls vary for each type of effect, control assignments are made separately for each effect block (parameter block). The effecter is provided with 6 MIDI RIC channels, each carrying independent control source and destination (parameter) information.

- Setting the Real Time Control (RTC)**

By using MIDI controls, such as dampers and modulation wheels, you can control various characteristics of an effect in real time. Since control conditions vary for each type of effect, control assignments are made separately for each effect block parameter in the RTC block. The effector is provided with 6 MIDI RTC channels, each carrying independent control source and destination (parameter) information.

6 Press PAGE/EDIT and use page 2 to specify kind of controller you will use.

1 Choose an effect from the memory banks.

PLAY : CEO - Hall / CEO - Hall

Fat Reverb

1.0	0.64	0.8	0.70	-6.0	-6.0
[Size]	[Rohm]	[Size]	[Rohm]	[FAA-1]	[FAA-1]

2 Press PAGE/EDIT twice.

3 Press FUNCTION A to choose "RTC."

EDIT SELECT : RTC Active P

PAGE : 12

4 Use the FUNCTION buttons (A-F) to choose an RTC channel [1-6].

Real Time Controller Select : ...

—0— —0— —0— —0— —0— —0—

RTC 1 RTC 2 RTC 3 RTC 4 RTC 5 RTC 6

5 Use page 1 to specify the parameter you want to control.

EDIT : RTC 1 (Parameter) PAGE : 12

Hall OnOff Off On

[Block] [PARAM] [Min] [Max]

Parameter

Effect Balance

EXAMPLE

Suppose you want to set RTC 1 to use the MIDI control change number 8 (balance control) to change the Hall Reverb effect balance from 75.25 to 25.75:

EDIT : RTC 1 (Parameter) screen (step 5) :

Set [Block] to "HALL," and set [PARAM] to "E/BAT" (effect balance).

Then set [Min] to "75.25" and [Max] to "25.75."

EDIT : RTC 1 [Source] screen (step 6) :

Set [Source] to "C8" (control 8), [Min] to "0" and [Max] to "127."

Now you can adjust the effect balance from 75.25 to 25.75 when you adjust control change number 8 (balance control) from 0 to 127.

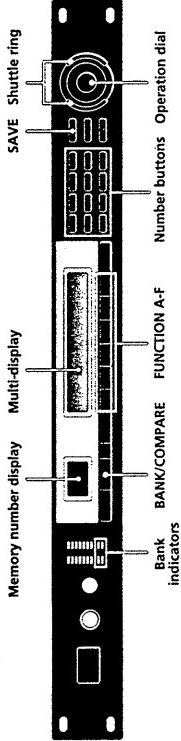
Block: selects the block to be controlled, select OFF if you don't want to use that RTC channel.
[PARAM]: specifies the parameter to be controlled from the selected block.
[Min]: specifies the minimal value of the parameter's adjustable range.
[Max]: specifies the maximal value of the parameter's adjustable range.

21 EN

Saving Processed Effects (SAVE)

Saving an Effect

Effects created by changing the parameter values with the edit function can be stored in one of the two USER memory banks for later use. Each USER bank has room for 99 effects, so you can store up to 198 different effects.



The following procedure shows you how to store an effect in one of the USER memory banks.

1 Press SAVE.

SAVE : Fat Reverb	MAR /22/95 00:00
U1	8
[BANK#] [MEM]	[Name]

4 Press FUNCTION C [Name].

SAVE : Fat Reverb	Fat Reverb
[CLR]	[DEL]
[INS]	[>]

SAVE : Fat Reverb	Fat Reverb
U1	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U1	8
[BANK#]	[MEM]

2 Press FUNCTION A [BANK#] and use the operation dial to select the user memory bank (USER 1 or USER 2) where you want to save the effect.

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

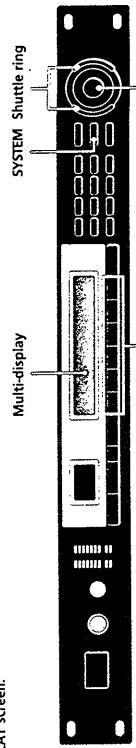
SAVE : Fat Reverb	MAR /22/95 00:00
U2	8
[BANK#]	[MEM]

<tbl_struct

Setting the System Environment

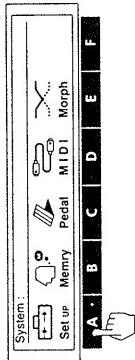
In the system mode lets you set up the effector's operating environments. To go back to the previous screen during setup, press EXIT once. To return to the play mode after making adjustments, press EXIT a few times until you reach the PLAY screen.

The following steps describe how to make changes in the system setup.



1 Press SYSTEM.

2 Press FUNCTION A to select "Set Up."



- 3 Use FUNCTION buttons (A-F) to choose the items you want to adjust.**

- 4 Use FUNCTION buttons (A-F), operation dial, shuttle ring, number buttons, or the SHIFT and ▲ and ▼ buttons to make the adjustments you desire.**

FUNCTION A [Model] selects the display mode.
Name: displays the name of the memory file in large characters
and the Active Parameter settings in small characters.
Value: displays the memory name in small characters and the
Active Parameter settings in large characters.
FUNCTION B [LCD] adjusts the contrast of the display.

Setting the Noise Gate (Gate)

Use the noise gate function when the source of the input signal generates a lot of noise. Running the input signal through the noise gate before processing reduces noise when no sound is being output.

- 1 Press SYSTEM.
- 2 Press FUNCTION A or B to choose "Pedal 1" or "Pedal 2."
- 3 Press FUNCTION C "Pedal."

FUNCTION A [Type] sets the type of pedal function.
MEM +/MEM - : changes memory numbers up/down.
Bank +/Bank - : changes bank numbers up/down.
TBL +/TBL - : changes the table numbers specified in the pedal program table up/down.

Bypass: sets the pedal to work as the bypass switch.
RTC: sets the pedal to control the parameters set in RTC (see page 21).

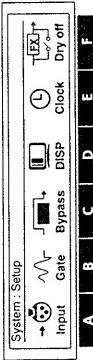
FUNCTION B [MINI] lets you input the setting for when the pedal is in the "up" position (minimum).

FUNCTION C [MAXI] lets you input the setting for when the pedal is in the "down" position (maximum).
FUNCTION D [Curve] lets you select the MIN to MAX transition curve.

FUNCTION E [TBL#] lets you select the pedal program table numbers (1-10) when you set FUNCTION A to TBL +/-.
FUNCTION F [MEM#] lets you select the memory bank and memory number that will respond to the table number set at FUNCTION E.

- 1 Press SYSTEM.**

- 2 Press FUNCTION A to select "Set Up."**



- 3 Use FUNCTION buttons (A-F) to choose the items you want to adjust.**

- 4 Use FUNCTION buttons (A-F), operation dial, shuttle ring, number buttons, or the SHIFT and ▲ and ▼ buttons to make the adjustments you desire.**

The display function lets you adjust the display mode and display contrast.

- 1 Press SYSTEM.
- 2 Press FUNCTION A "Set Up."
- 3 Press FUNCTION D "Disp."

FUNCTION A [Model] selects the display mode.

Name: displays the name of the memory file in large characters
and the Active Parameter settings in small characters.
Value: displays the memory name in small characters and the
Active Parameter settings in large characters.

FUNCTION B [LCD] adjusts the contrast of the display.

Setting up the Pedal Parameters

Pedals connected to the PEDAL 1 and/or PEDAL 2 jacks on the rear panel can be used to control the functions listed below.

- 1 Press SYSTEM.
- 2 Press FUNCTION A or B to choose "Pedal 1" or "Pedal 2."
- 3 Press FUNCTION C "Pedal."

FUNCTION A [Type] sets the type of pedal function.

MEM +/MEM - : changes memory numbers up/down.

Bank +/Bank - : changes bank numbers up/down.

TBL +/TBL - : changes the table numbers specified in the pedal program table up/down.

Bypass: sets the pedal to work as the bypass switch.

RTC: sets the pedal to control the parameters set in RTC (see page 21).

FUNCTION B [MINI] lets you input the setting for when the pedal is in the "up" position (minimum).

FUNCTION C [MAXI] lets you input the setting for when the pedal is in the "down" position (maximum).

FUNCTION D [Curve] lets you select the MIN to MAX transition curve.

FUNCTION E [TBL#] lets you select the pedal program table numbers (1-10) when you set FUNCTION A to TBL +/-.
When using this unit is connected to a mixer in a send/return loop, as shown on Page 12, be sure cut the direct sound.

1 Press SYSTEM.

2 Press FUNCTION A "Set Up."

3 Press FUNCTION F "Dry On/Off."

The operation dial selects the dry mode.

OFF: forcibly cuts the direct level (to ∞) regardless of the direct level setting.

PCM: the direct level determined by the value stored in the mixer block of each effect.

PGM: the direct level determined by the value stored in the

mixer block of each effect.

Setting the Display Mode

FUNCTION A [Model] lets you select the display mode.

To set "Bypass," see page 15.

To set "Input," see page 13.

To set the MIDI functions see pages 21 and 26.

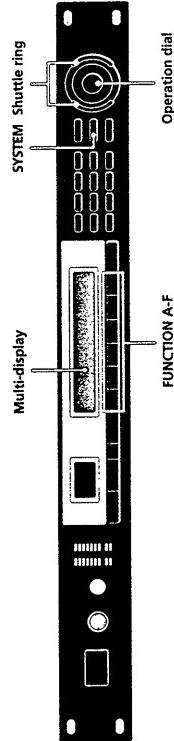
To organize the user memory, see page 23.

To set the morphing function, see page 16.

Using MIDI

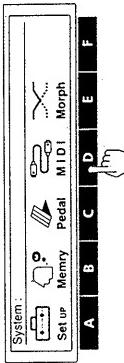
You can use the MIDI interface to control various aspects of this unit. For example, you can switch between memorized effects by using the program table, or save USER memory data onto an external storage device.

In addition, MIDI controls, like wheels and velocity effect controllers, can be used to control things like effect depth in real time. (See "Setting the Real Time Control (RTC)" on page 21.)

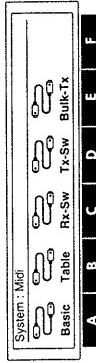


1 Press SYSTEM.

2 Press FUNCTION D to select "MIDI."



- 3 Use the FUNCTION buttons (A-F) to choose the MIDI block you want to adjust.**



- Select to**
Basic set basic MIDI functions.
Table determine the MIDI command table.

- Rx-Sw determine how MIDI data will be received.

- Tx-Sw determine how MIDI data will be transmitted.

- Bulk-Tx send MIDI data in bulk.

- 4 Use FUNCTION buttons (A-F), operation dial, shuttle ring, number buttons, or the SHIFT and ▲ and ▼ buttons to make the adjustments you desire.**

MIDI Transmit Switch Setup (Tx-Sw)

Tx-Sw lets you control how MIDI exclusive data is output from this unit (except when using Bulk-Tx).

1 Press SYSTEM.

2 Press FUNCTION D to choose "MIDI."

- 3 Press FUNCTION D to choose "Tx-Sw."**
FUNCTION A [PANEL] selects the whether or not exclusive messages that appear when buttons on the front panel are pressed will be sent via MIDI OUT.

Transmitting MIDI Data in Bulk (Bulk-Tx)

Bulk-Tx lets you transmit MIDI data in bulk.

1 Press SYSTEM.

2 Press FUNCTION D to choose "MIDI."

- 3 Press FUNCTION E to choose "Bulk-Tx."**
FUNCTION A [TYPE] selects the type of data that will be transmitted (U1, U2, U1, U2, SYSTEM, or ALL).
FUNCTION B [INUM] selects whether to transmit all the contents of a memory bank, or only individual memory numbers (when you select U1 or U2 for the [TYPE]).
FUNCTION F [EXEC] to sends the data.

Note

Be sure that both the sending and receiving MIDI channels are set to the same values. If the sending and receiving channels are different, the data will not be received even if OMNI is set to ON.

Preparing a Basic MIDI Setup (Basic)

Use "Basic" to set basic MIDI functions.

1 Press SYSTEM.

2 Press FUNCTION D to choose "MIDI."

- 3 Press FUNCTION A to choose "Basic."**
FUNCTION A [CH1] specifies the MIDI channel (1-16).
FUNCTION B [OMNI] turns the OMNI function ON/OFF.
FUNCTION C [OUT] sets the MIDI function OUT/TIRU.

MIDI Program Table Setup (Table)

TABLE lets you decide how the MIDI commands will effect a given memory number, memory bank .

1 Press SYSTEM.

2 Press FUNCTION D to choose "MIDI."

- 3 Press FUNCTION B to choose "Table."**
FUNCTION A [MIDI#] selects the MIDI program change number.
FUNCTION B [BANK#] selects the memory bank or bypass.
FUNCTION C [MEM#] selects the memory number.

MIDI Receive Switch Setup (Rx-Sw)

Rx-Sw lets you decide how this unit will receive MIDI data.

1 Press SYSTEM.

2 Press FUNCTION D to choose "MIDI."

- 3 Press FUNCTION C to choose "Rx-Sw."**
FUNCTION A [EXCLV] turns exclusive reception ON/OFF.
FUNCTION B [P, Chg.] turns program change reception ON/OFF.
FUNCTION C [C, Chg.] turns control change reception ON/OFF.
FUNCTION D [CH-TR] turns channel pressure reception ON/OFF.
FUNCTION E [BENDR] turns pitch bend reception ON/OFF.

Additional Information

Troubleshooting

The sound is not modified by the selected effect.

- Press BYPASS to cancel bypass.
- Is the effect set to "OFF"?

If this unit does not operate as expected, the problem may simply be an oversight, a disconnected cable or a setting error. Before calling a service technician, compare the symptoms of the problem with those listed below to see if you can correct the problem yourself.

No sound is heard, or the sound is small.

- Press BYPASS to cancel mute.
- When inputting analog signals, check to see if the INPUT knob is set to the appropriate level.
- When inputting digital signals, check the input levels in the System Setup.
- Check that all the cables are connected correctly.
- Make sure the appropriate input mode is selected on the System Setup Input screen. You cannot input analog signals if the input mode is set to "DIGITAL".
- Make sure the effect levels in the mixer block are not set excessively low.
- Check the volume of the connected amplifier or mixer.

The morphing effect does not work.

- Make sure to SAVE the effect after changing the structure to [MORPH].
- Make sure the structures of all the effects you want to morph between are set to [MORPH].

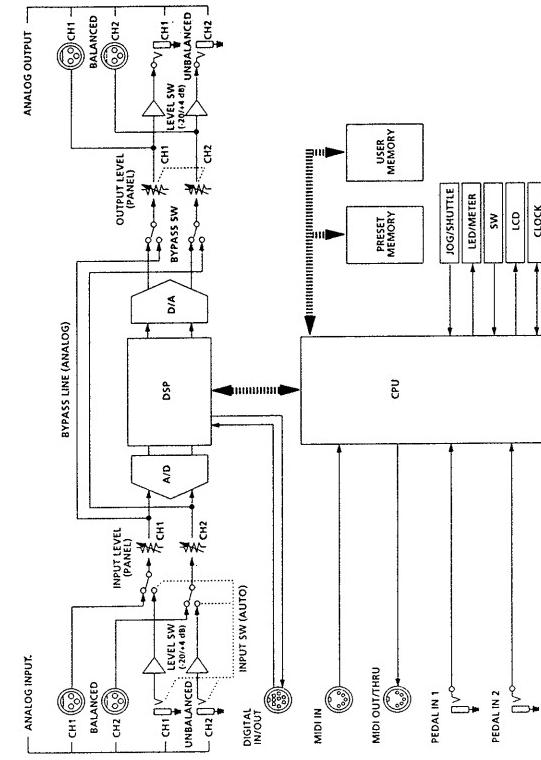
The input level CLIP indicator lights.

- Turn INPUT to the left to reduce the input level.
- Reduce the output level of the source component.
- Set the INPUT level selector switch to +4 dB and use the INPUT adjustment knob to re-adjust the input level.

MIDI operations cannot be carried out.

- Make sure the MIDI receive channel matches the transmit channel of the MIDI device.
- Make sure the MIDI control number is set correctly.
- Make sure the MIDI cable is connected securely.

Block Diagram



Regarding the options

Two types of digital I/O cables are separately sold.
(Dedicated cables)

- ① RK-V77A
 - Connection cable for AES/EBU
 - No. 1-769-782-11
- ② RK-V77S
 - Connection cable for SPDIF
 - No. 1-769-783-11

* Outline of optional cables

Special cables used when connecting DPS-V77 and a digital audio format. Depending on the type of the digital audio format, there are two types of dedicated cables, the RK-V77A for professional use and the RK-V77S for consumers using SPDIF (general CD players, DAT, etc.).

Digital I/O Terminal Chart

AES/EBU type

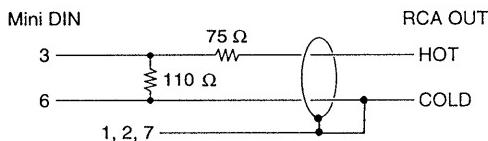
	XLR type	Mini DIN (rear panel)
IN	HOT: 2	5
	COLD: 3	8
	GND: 1	1, 2, 4, 7
OUT	HOT: 2	3
	COLD: 3	6
	GND: 1	1, 2, 4, 7

SPDIF type

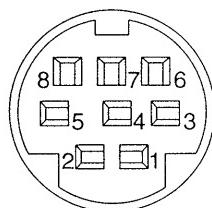
	RCA type	Mini DIN (rear panel)
IN	HOT	5
	COLD	8
OUT*	HOT	3
	COLD	6

1, 2, and 7 are shorted
4 is open

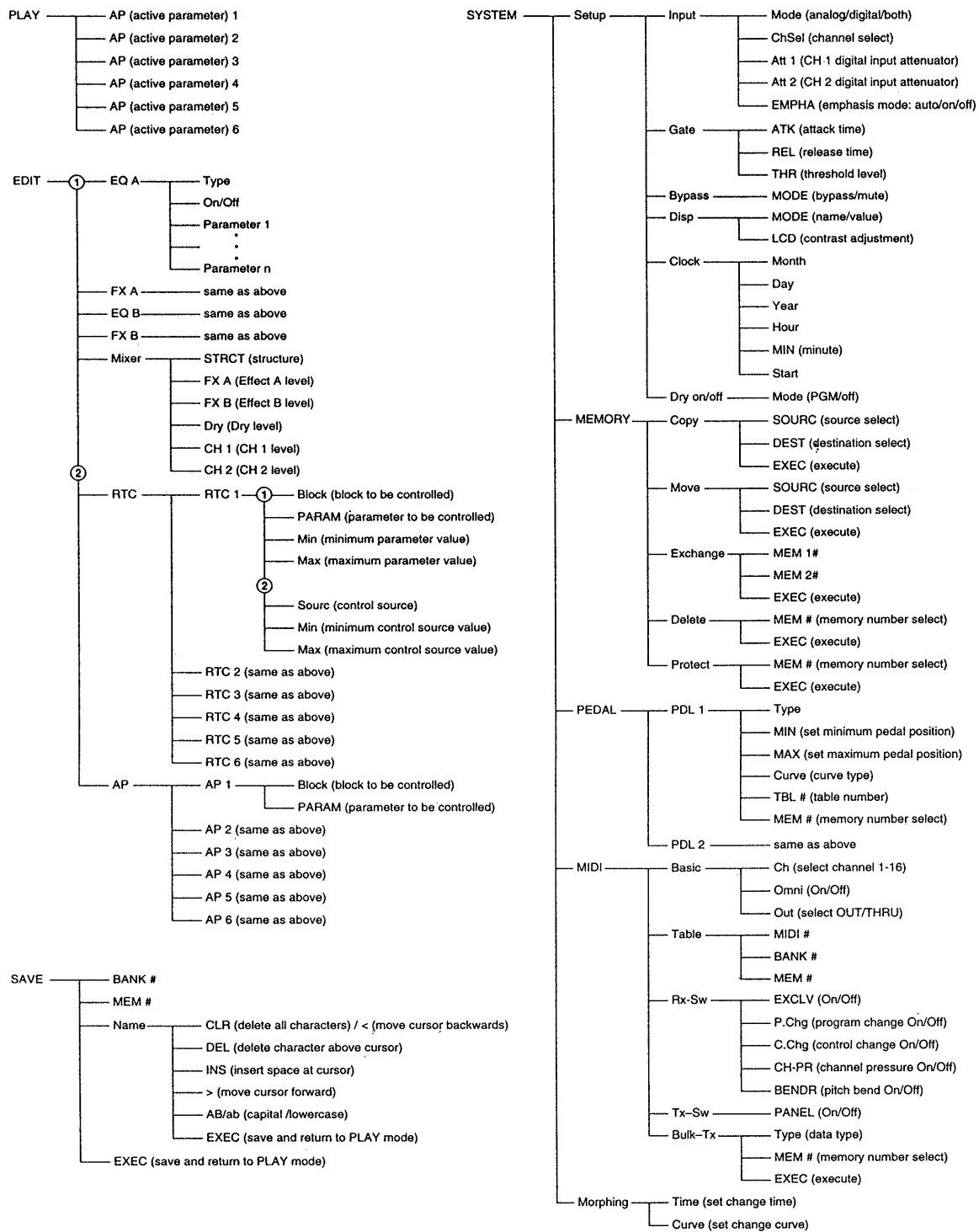
* Note



Mini DIN terminal



Functional Hierarchy



SECTION 2
TEST MODE

- This product uses a microcomputer and is equipped with a MIDI interface for musical instruments and computers, and it has specifications that make possible rewriting of the internal memory with external MIDI equipment.

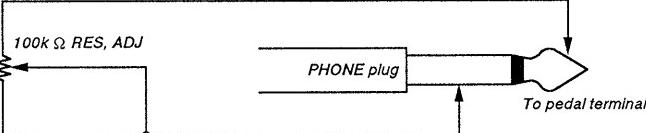
Due to this, when required, the internal data can be rewritten by the use of external equipment, etc., and in case the internal data should break down at the time of repair (Example: when the power is cut off), it may happen that the operation becomes unstable. Therefore, when carrying out service, make sure to pay attention to the following matters.

〈Inspection when carrying out repair〉

A self-test mode function has been provided to carry out inspection of each function without having to use a special jig when the repair has been completed. Make absolutely sure to carry out these inspections before returning the unit to your customer.

〈Regarding the test mode〉

All of the inspections should be carried out, but in case some of them have already been completed they may be skipped upon proper judgment.

Subject	Operation and Display
1. Entering the test mode. ● Initialization of the memory	<p>Turn the POWER switch ON while depressing the 3 keys of [BANK], [EDIT] and [C]. The following display will appear and the test mode menu will be activated.</p> <pre> ----- ----- ----- ----- ----- ----- ----- ----- TEST MODE MENU > Initialize User Memory? YES NO ----- ----- ----- ----- ----- ----- ----- ----- [EDIT] [A] [B] [C] [D] [E] [F] [EXIT] </pre> <p>1) When initializing the user memory, select YES. 2) When you do not want to initialize the user memory, select NO. Note : Concerning initialization, please refer to <Examples when initialization has to be carried out> on page 16.</p>
2. Inspection of each function (No. 1) ● Battery ● Pedal	<p>The following display will appear and test mode No. 1 will be activated.</p> <pre> ----- ----- ----- ----- ----- ----- ----- ----- TEST MODE 1 * 1 Battery [3.0] PDL 1 [] PDL 2 [] J & S [] SW [] ----- ----- ----- ----- ----- ----- ----- ----- [EDIT] [A] [B] [C] [D] [E] [F] [EXIT] </pre> <p>1) The voltage of the internal lithium battery (BA601) is displayed. As the data of the internal SRAM cannot be maintained if the voltage is lower than 2V, replace the BA601.</p> <p>2) PEDAL1/PEDAL2 terminal (check on the rear panel).</p> <ul style="list-style-type: none"> The pedal terminal A/D conversion value is displayed in the range of 000 – 127 within brackets [] by adding the circuit shown below. Turn the semifixture and confirm that the figures change. If not especially required, this procedure may be skipped. If there is no connection at all, 127 will be displayed.
● Jog&Shuttle ● Switch	 <p>3) Checking the Jog & Shuttle dial (front panel)</p> <ul style="list-style-type: none"> When rotating the dial, “*” will be displayed within the brackets []. When turning the Jog dial once to the left and once to the right, the brackets [] will be fully filled by “*” when turning the Shuttle dial fully to the left and right. 4) Checking the switch (front panel) <p>When pressing the switch, “*” will be displayed within the brackets []. When fully turning the switch, the brackets [] will be fully filled by “*”.</p>

Subject	Operation and Display
● Others	<p>5) Other checks</p> <ul style="list-style-type: none"> ● Other error messages are displayed in * 1. [DRAM1 ERR] or [DRAM2 ERR] Automatic inspection of the soldered bridge, etc., of IC601, IC602, IC603 is carried out. If this display appears, apply a soldering iron to the terminal of each IC and check the application of the solder. <p>In case of [DRAM1 ERR], check IC601 and IC602, and in case of [DRAM2 ERR], check IC603 and IC604.</p> <p>[MIDI PORT ERROR] By using a DIN cable to connect the MIDI IN/OUT terminals on the rear panel, the automatic inspection of the MIDI terminals is carried out. When there is no special requirement to make a connection, this display will appear but it may be ignored.</p>
3. Inspection of each function (No. 2)	<ul style="list-style-type: none"> ● If the brackets [] were fully filled with asterisks “ * ” in the preceding checks of the switch and Jog & Shuttle, press the [ENTER] key. The following display will appear and test mode No. 2 will be activated. <div style="text-align: center;"> <pre> TEST MODE 2 [LCD] [LED] [EDIT] [A] [B] [C] [D] [E] [F] [EXIT] </pre> </div> <ol style="list-style-type: none"> 1) When pressing the [A] key, check that all LCD dots become black. 2) When all the LCD dots have become black, check that the contrast changes when you rotate the Jog & Shuttle dials. 3) When pressing the [B] key, check that each dot and segment light up between the 8 segments, meters and LEDs.
4. Completion of the inspection	When pressing the [EXIT] key, reactivating is carried out and the test mode is completed.

〈Examples when initialization has to be carried out〉

1. When reconnecting the power supply and the keys do not have any effect, and when there are distortions in the display due to unstable operation of the software.
2. When the version of the ROM (IC607) has been changed. (Including change of circuit board.)
3. When the power supply has been changed or removed once.

* Even except for the above, when there are no special instructions from the customer, carry out the initialization operation.
The following notes are included in the "Instruction Manual". (See step 3.)

【Notes on being requested to carry out repair】

When requesting a repair, data in the USER memory may be reverted to the original factory data settings.
Be sure to save any important data in an external MIDI data filer, or make written notes of the parameter settings.

* Method of initializing without entering the test mode

- Turn the POWER switch ON while simultaneously keeping the [SAVE] and [ENTER] keys depressed.
 - After the title screen has been shown and "Initialized!" is displayed, the initialization is completed.
- * In this case, the data of the internal clock is not initialized.

* The following shows the initialization method and the content that is actually initialized.

Content being initialized	Initialization method [SAVE] + [ENTER]	Initialization with the test mode	
		Memory initialization (YES)	Memory initialization (NO)
Initialization of the internal system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initialization of the user memory	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Initialization of the clock data*	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

* As to setting of the clock, please refer to page 24 in the Instruction Manual.

SECTION 3 CLOCK CONSTRUCTION

【Regarding the clock source of this unit】

1. The clock source for IC614 (CPU : HD6413002) is X601 (10 MHz).
2. The clock source for IC613 (Clock IC : NJU6355) is X603 (32.768 kHz).
3. The clock sources for the digital audio system (A/D, D/A, DPS, etc.) are X301 (48.6 MHz) and X901 (12.288 MHz).

【Regarding the clock of the digital audio system】

The condition of the digital audio system clock differs depending on whether the digital audio interface input is used (external) or not (internal).

The difference between internal (System Setup Input = Analog) and external (System Setup Input = Digital or both, and input is made into Digital IN) is the use of 12.288 MHz or the output of IC901 (Digital Audio Interface Receiver: pin ⑯ MCK (256 fs) of CS8412. This is selected by the EXT/INT of pin ② of IC906 (HC153). (When internal it is L.)

- * Pin ⑯ MCK of IC901 differs according to the sampling frequency of the signal that is input to the digital audio interface. In case of 48 kHz it is 12.288 MHz and in case of 44.1 kHz it is 11.2896 MHz.
- * When the clock source is external, the oscillation of the internal crystal X901 (12.288 MHz) is stopped in order to prevent interference between the clocks.

IC305 (Digital Filter : CXD8482), which is based on this master clock, outputs LRCK (=1fs), which is the sampling frequency for the whole system, from pin ⑯ or 64 fs BCK from pin ⑰.

IC304 (A/D converter : CXD8493) receives a clock of 128 fs from pin ⑯ of IC305 (Digital Filter : CXD8482) and operates.

The master clock (1024 fs) of IC307 (D/A converter : CXD8505) is generated by the VCO block (Q904, Q905 and IC909, etc.). It uses IC910 (PLL : TC8051AP) from LRCK, which is created by IC305 (Digital Filter : CXD8482), to lock. The 1024 fs clock that is oscillated by VCO becomes the 256 fs output from pin ⑯ (256 fso) of IC307 (D/A converter : CXD8505), and it is further divided by IC907 and IC908 (Prescaler : HC163) to become 1fs, after which it is fed back to IC910 (PLL : TC8051AP) to form a loop.

The master clock of IC602 and 604 (DSP : CXD2707) is fixed at X301 (48.6 MHz). The master clock of DSP is asynchronous with the sampling frequency, but the processing of the DPS signal is carried out at a LRCK (1fs) cycle.

- * At the time of digital input (clock source = external) the master clock that is input to IC305 (Digital Filter : CXD8482) is changed to 256 fs which is output from pin ⑯ of IC901 (Digital Audio Interface Receiver : CS8412), but all sequences besides that are the same as for the internal operation.

SECTION 4

EXPLANATION OF IC TERMINALS

IC602, 604 CDX2707Q (DSP)

Pin No.	Pin name	I/O	Description
1	EA9	O	External install RAM address. Not used (OPEN)
2	EC0	O	External install RAM address. Not used (OPEN)
3	V _{DD}	—	Power supply. (+5V)
4	V _{ss}	—	Power supply. (GND)
5, 6	EC1 – 2	O	External install RAM address. Not used (OPEN)
7 – 9	EA13 – 15	O	External install RAM address. Not used (OPEN)
10	TST	I	Test data input. “L” : Normal
11	TDR	I	Test data input. “L” : Normal
12	BFOT	O	Master clock buffer output. Not used (OPEN)
13	CLKO	O	Master clock output. Not used (OPEN)
14	CLKI	I	Master clock input.
15	V _{ss}	—	Power supply. (GND)
16	TS0	I	Test data input. “L” : Normal
17	TS1	I	Test data input. “L” : Normal
18	TSA	I	Test data input. “L” : Normal
19	LRK0	I	LRCK input.
20	LRK1	I	LRCK input.
21	BCK0	I	BCK input.
22	BCK1	I	BCK input.
23	BCT	O	Frequency divider BCK output.
24	LCT	I/O	Counter input/frequency divider LRCK output for SYNC DET.
25	SIA	I	Serial data input.
26	SIB	I	Serial data input.
27	SIC	I	Serial data input.
28	V _{DD}	—	Power supply. (+5V)
29	V _{ss}	—	Power supply. (GND)
30	SOA	O	Serial data output.
31	SOB	O	Serial data output.
32	SOC	O	Serial data output.
33	ECJ0	I/O	Terminal input/test data output for conditional jump.
34	ECJ1	I/O	Terminal input/test data output for conditional jump.
35	ECJ2	I/O	Terminal input/test data output for conditional jump. Not used (GND connection)
36	ECJ3	I/O	Terminal input/test data output for conditional jump. Not used (GND connection)
37	REDY	O	HCIF Readay signal output. (Open drain)
38	TRDT	O	HCIF data output.
39	XLAT	I	HCIF data • mode identification signal input.
40	V _{ss}	—	Power supply. (GND)
41	SCK	O	HCIF shift clock output.
42	RVDT	I	HCIF data input.
43	SCL0	O	Test data output. Not used (OPEN)
44	SCL1	O	Test data output. Not used (OPEN)

Pin No.	Pin name	I/O	Description
45	LR0F	O	Test data output. Not used (OPEN)
46	LR1F	O	Test data output. Not used (OPEN)
47	XRST	I	System reset input. (Active "L")
48	ED0	I/O	External RAM data input/output. Not used (L level)
49	ED16	I/O	External RAM data input/output.
50	ED1	I/O	External RAM data input/output. Not used (L level)
51	ED17	I/O	External RAM data input/output.
52	ED2	I/O	External RAM data input/output. Not used (L level)
53	V _{DD}	—	Power supply. (+5V)
54	V _{SS}	—	Power supply. (GND)
55	ED18	I/O	External RAM data input/output.
56	ED3	I/O	External RAM data input/output. Not used (L level)
57	ED19	I/O	External RAM data input/output.
58	ED4	I/O	External RAM data input/output. Not used (L level)
59	ED20	I/O	External RAM data input/output.
60	ED5	I/O	External RAM data input/output. Not used (L level)
61	ED21	I/O	External RAM data input/output.
62	V _{SS}	—	Power supply. (GND)
63	ED6	I/O	External RAM data input/output. Not used (L level)
64	ED22	I/O	External RAM data input/output.
65	ED7	I/O	External RAM data input/output. Not used (L level)
66	ED23	I/O	External RAM data input/output.
67	ED8	I/O	External RAM data input/output. Not used (L level)
68	ED24	I/O	External RAM data input/output.
69	ED9	I/O	External RAM data input/output. Not used (L level)
70	V _{SS}	—	Power supply. (GND)
71	ED25	I/O	External RAM data input/output.
72	ED10	I/O	External RAM data input/output. Not used (L level)
73	ED26	I/O	External RAM data input/output.
74	ED11	I/O	External RAM data input/output. Not used (L level)
75	ED27	I/O	External RAM data input/output.
76	ED12	I/O	External RAM data input/output. Not used (L level)
77	ED28	I/O	External RAM data input/output.
78	V _{DD}	—	Power supply. (+5V)
79	V _{SS}	—	Power supply. (GND)
80	ED13	I/O	External RAM data input/output. Not used (L level)
81	ED29	I/O	External RAM data input/output.
82	ED14	I/O	External RAM data input/output. Not used (L level)
83	ED30	I/O	External RAM data input/output.
84	ED15	I/O	External RAM data input/output. Not used (L level)
85	ED31	I/O	External RAM data input/output.
86	XOE	O	External RAM OE output.
87	V _{SS}	—	Power supply. (GND)
88	CAS	O	External DRAM CAS output.
89	XWE	O	External RAM WE output.
90	RAS	O	External DRAM CAS/external (P) SRAM CE.
91 – 94	EA0 – 3	O	External RAM address output.
95	V _{SS}	—	Power supply. (GND)
96 – 99	EA4 – 7	O	External RAM address output.
100	EA8	O	External RAM address output. Not used (OPEN)

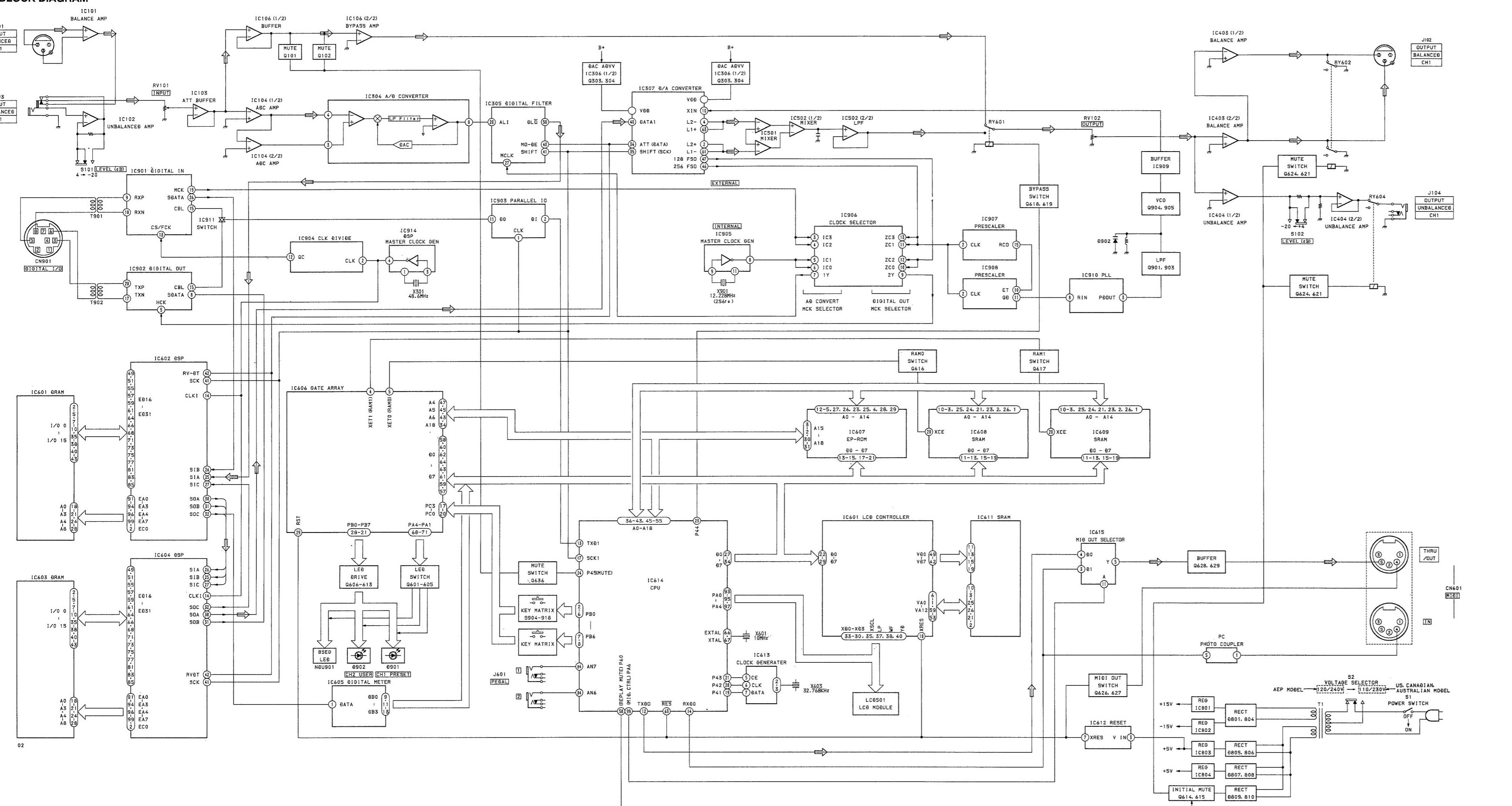
IC614 HD6413002F10 (MASTER CONTROLER)

Pin No.	Pin name	I/O	Description
1	Vcc	—	Power supply. (+5V)
2 – 8	PB0 – PB7	O	Key decoder matrix output.
9	PB7	O	Data enable output to parallel I/O (IC903).
10	<u>RESO</u>	O	Reset signal output. (Not used)
11	Vss	—	GND
12	TXD0	O	Serial data output for communications.
13	TXD1	O	Serial data output for communications.
14	RXD0	I	Serial data input for communications.
15	RXD1	I	Serial data input for communications.
16	P94	I	READY signal input.
17	SCK1	O	Serial data timing clock output.
18	P40 (O)	O	Data I/O select signal output to clock IC (IC613).
19	P41 (I/O)	I/O	Data I/O terminal to clock IC (IC613).
20	P42 (O)	O	Serial data timing clock output.
21	P43 (O)	O	Chip enable output to clock IC (IC613).
22	Vss	—	GND
23	P44 (BYPS)	O	Bypass relay switch output.
24	P45 (MUTE)	O	Bypass mute switch output.
25	P46 (XRST)	O	Reset output terminal.
26	P47 (AD_PD)	O	Power down mode signal output to A/D converter IC (IC304).
27 – 34	D0 – D7	I/O	Data signal input/output terminal to data bus line.
35	Vcc	—	Power supply. (+5V)
36 – 43	A0 – A7	O	Address data output to address bus line.
44	Vss	—	GND
45 – 55	A9 – A18	O	Address data output to address bus line.
56	A19	O	Not used.
57	Vss	—	GND
58	P60 (RELAY MUTE)	O	Initial mute output.
59	P61 (ECJ0_0)	O	Conditional jump output to DSP (IC602).
60	P62 (ECJ0_1)	O	Conditional jump output to DSP (IC604).
61	PHA1	O	System clock output.
62	<u>STBY</u>	I	Standby input. (Fixed "H" level)
63	<u>RES</u>	I	Reset signal input.
64	NM1	I	Non maskable intrude signal input. (Fixed "L" level)
65	Vss	—	GND

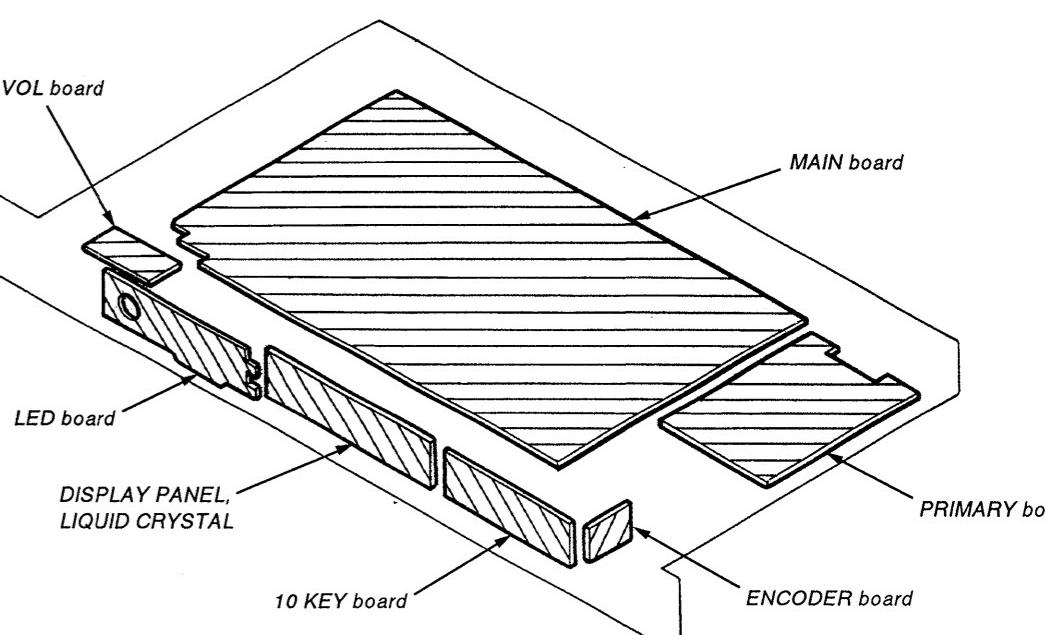
Pin No.	Pin name	I/O	Description
66	EXTAL	O	System clock. (10MHz)
67	XTAL	I	System clock. (10MHz)
68	Vcc	—	Power supply.
69	<u>AS</u>	O	Not used.
70	<u>RD</u>	O	Lead signal output to digital meter (IC605), gate array (IC606), master program ROM (IC607) and master RAM (IC608, 609)
71	<u>HWR</u>	O	Upper rank byte light output to the digital meter (IC605), gate array (IC606), master RAM (IC608, 609).
72	<u>LWR</u>	O	Not used.
73	MD0	I	Operation mode select input. (Fixed "H" level)
74	MD1	I	Operation mode select input. (Fixed "H" level)
75	MD2	I	Operation mode select input. (Fixed "L" level)
76	AVcc	—	A/D converter power supply. (+5V)
77	VREF	I	Reference voltage input to A/D converter.
78	AN0	I	Battery input terminal.
79	AN1	I	Error condition input from digital input IC (IC901).
80	AN2	I	FREQ REPORT 0 input from digital input IC (IC901).
81	AN3	I	FREQ REPORT 1 input from digital input IC (IC901).
82	AN4	I	FREQ REPORT 2 input from digital input IC (IC901).
83	AN5	I	ERROR FLAG input from digital input IC (IC901).
84	AN6	I	Padal switch 2 input terminal.
85	AN7	I	Padal switch 1 input terminal.
86	AVss	—	GND (A/D converter)
87	<u>IRQ0</u>	I	Interrupt request signal input from LCD controller (IC610).
88	P81	O	Conditional jump output to DSP (IC602).
89	P82	O	Conditional jump output to DSP (IC604).
90	<u>CS1</u>	O	Address data output to gate array (IC606).
91	<u>CS0</u>	O	Chip enable output to EEPROM (IC607).
92	Vss	—	GND
93	PA0	O	LCD data output.
94	PA1	O	LCD data output.
95	PA2	O	LCD data output.
96	PA3	O	Clock change signal output.
97	PA4	O	LCD data output.
98	PA5	O	Latch output to D/A converter.
99	PA6	O	MIDI THRU/OUT change signal output.
100	A20	O	Not used.

SECTION 5 DIAGRAMS

5-1. BLOCK DIAGRAM



• CIRCUIT BOARD LOCATION



5-2. PRINTED WIRING BOARDS

• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D301	H - 3	IC106	E - 2	Q101	E - 2
D302	H - 4	IC107	E - 3	Q102	E - 2
D601	B - 12	IC301	G - 11	Q201	E - 2
D602	D - 5	IC302	G - 10	Q202	E - 2
D603	C - 8	IC303	I - 10	Q301	I - 4
D604	C - 8	IC304	H - 2	Q302	I - 4
D605	C - 6	IC305	I - 2	Q303	H - 4
D606	C - 12	IC306	H - 4	Q304	H - 4
D607	C - 11	IC307	G - 5	Q601	H - 9
D801	F - 15	IC401	F - 5	Q602	H - 9
D802	F - 15	IC402	E - 5	Q603	H - 9
D803	F - 15	IC403	D - 6	Q604	H - 10
D804	F - 15	IC404	B - 7	Q605	H - 10
D805	I - 16	IC501	F - 6	Q606	J - 7
D806	I - 16	IC502	E - 8	Q607	J - 7
D807	I - 16	IC503	D - 6	Q608	J - 7
D808	I - 16	IC504	B - 7	Q609	J - 8
D809	H - 13	IC601	J - 4	Q610	J - 8
D810	I - 13	IC602	J - 5	Q611	J - 8
D811	H - 13	IC603	J - 6	Q612	J - 8
D812	H - 13	IC604	I - 6	Q613	J - 8
D813	G - 13	IC605	I - 21	Q614	H - 13
D901	F - 9	IC606	H - 11	Q615	H - 13
(LED BOARD)	H - 16	IC607	G - 2	Q616	D - 13
		IC608	F - 11	Q617	D - 14
D902	F - 7	IC609	E - 11	Q618	D - 5
		IC610	I - 9	Q619	D - 5
		IC611	I - 9	Q620	C - 9
		IC612	C - 13	Q621	C - 9
		IC613	D - 10	Q622	C - 9
D903	J - 37			Q623	C - 9
D904	J - 36	IC614	D - 11	Q624	C - 9
D905	K - 36	IC615	C - 13	Q625	C - 9
D906	J - 36	IC801	D - 9	Q626	B - 13
D907	J - 36	IC802	D - 9	Q627	B - 13
D908	K - 36	IC804	J - 16	Q628	B - 14
D909	J - 35	IC801	D - 9	Q629	B - 14
D910	J - 35	IC802	D - 8	Q630	G - 10
D911	K - 35	IC803	E - 9	Q901	F - 8
D912	J - 35	IC804	J - 2	Q902	F - 8
D913	J - 35	IC805	F - 9	Q903	G - 8
D914	K - 35	IC806	F - 8	Q904	F - 7
D915	J - 34	IC807	E - 8	Q905	G - 7
D916	J - 34	IC808	F - 8		
D917	K - 34	IC809	G - 7		
IC101	C - 1	IC910	H - 5		
IC102	B - 3	IC911	D - 9		
IC103	E - 2	IC913	G - 9		
IC104	F - 2	IC914	J - 3		
IC105	F - 3				

Note:

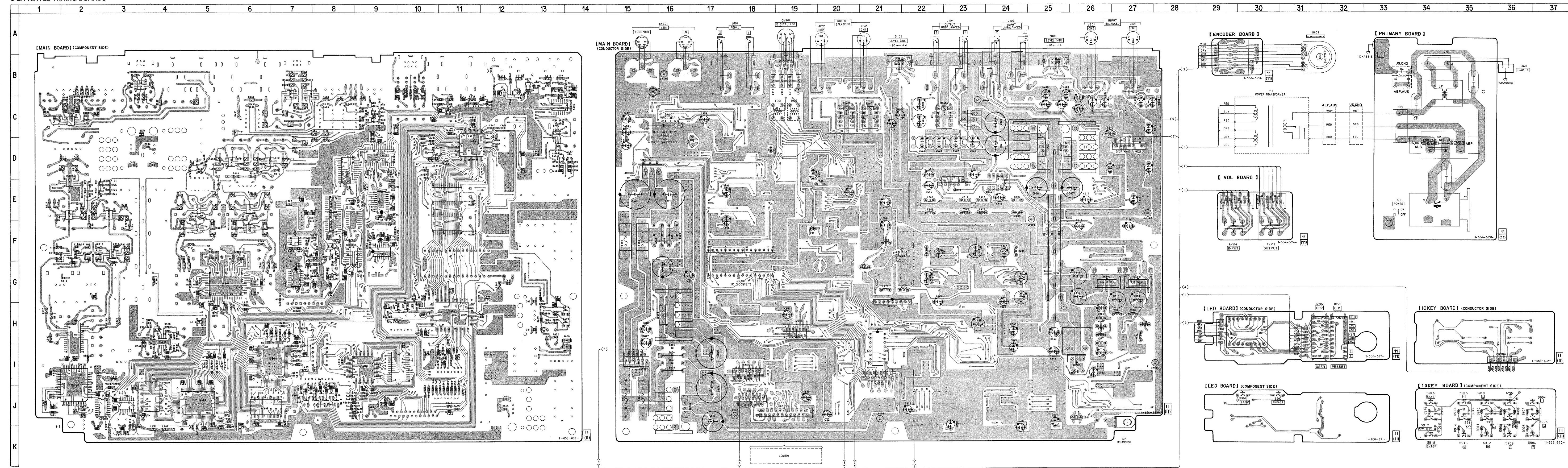
- : Through hole.
- : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated)

Caution :

Pattern face side : Parts on the pattern face side seen from
(Conductor Side) the pattern face are indicated.
Parts face side : Parts on the parts face side seen from the
(Component side) parts face are indicated.

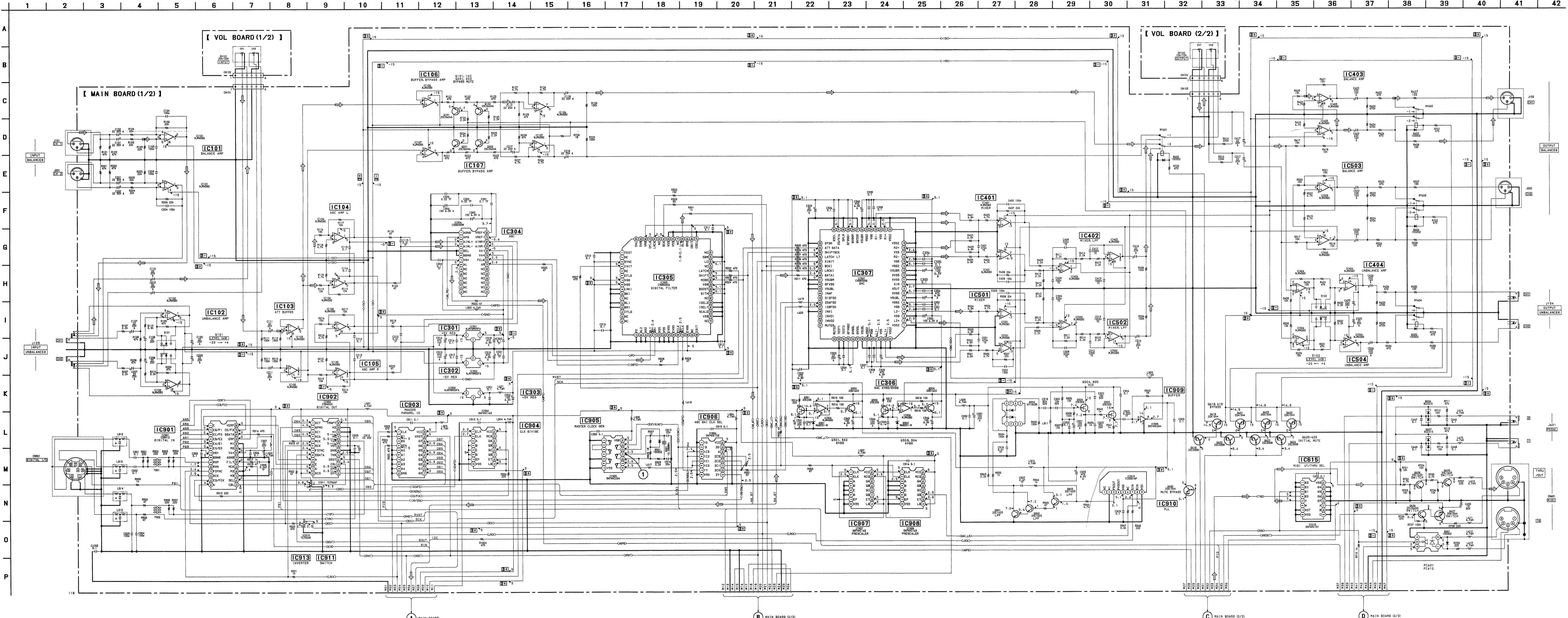
Abbreviation

CND : Canadian
AUS : Australian

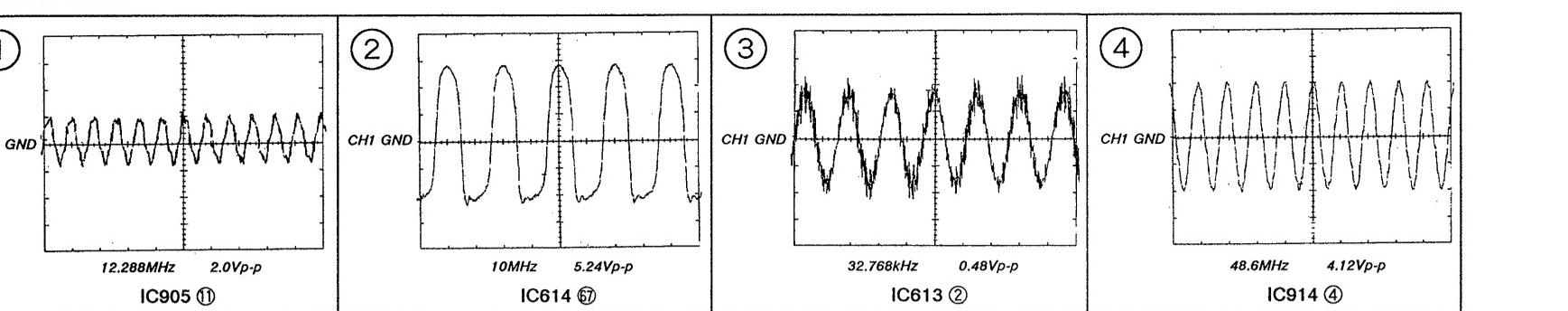


5-3. SCHEMATIC DIAGRAM (1/2)

• Refer to page 43 for IC Block Diagrams.



• WAVEFORMS



Note :

- All capacitors are in μ F unless otherwise noted, pF: μ F 50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- \triangle : internal component.
- $B+$: B+ Line
- $B-$: B- Line
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.

- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

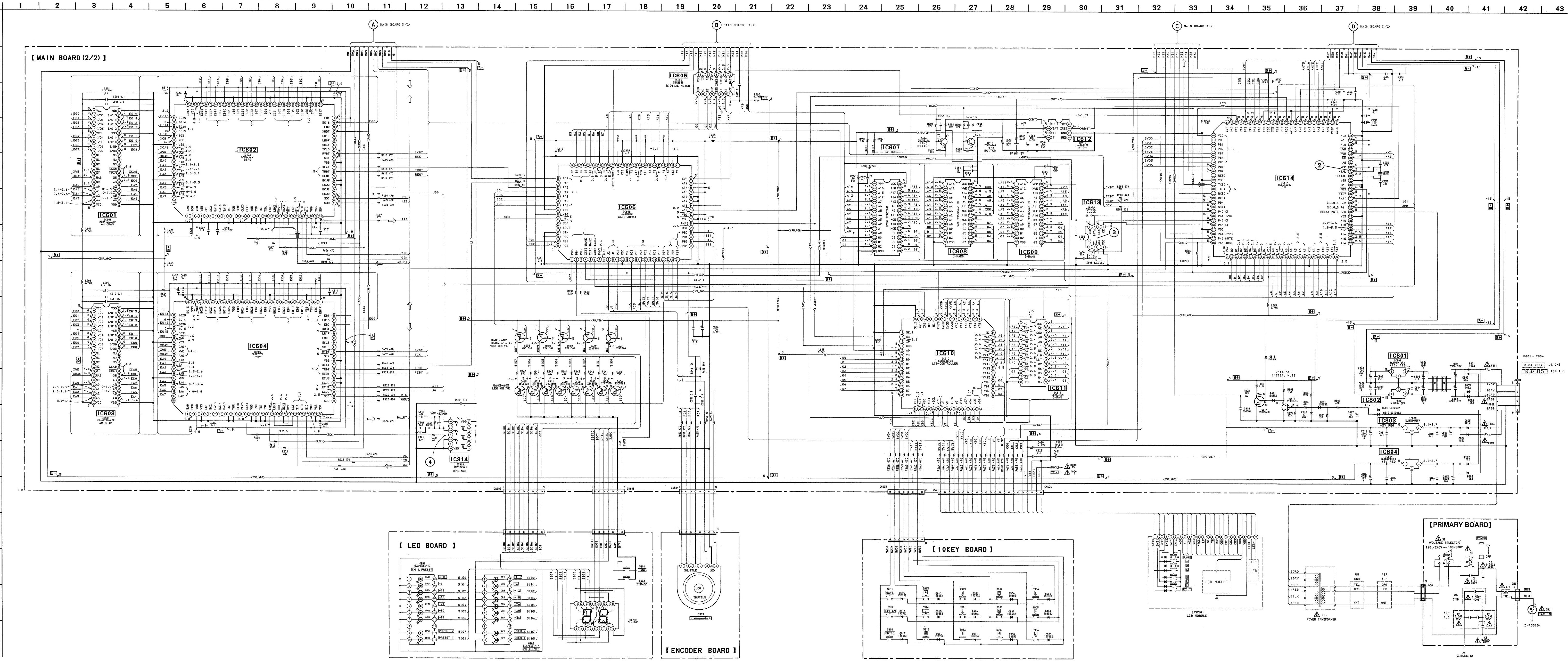
Notes

- | | | |
|---|--|--|
| capacitors are in μ F unless otherwise noted. pF: $\mu\ \mu$ F or less are not indicated except for electrolytics and diodes. | <ul style="list-style-type: none"> • B+ : B+ Line • B- : B - Line <p>Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.</p> <p>Voltages are taken with a VOM (Input impedance $10M\ \Omega$). Voltage variations may be noted due to normal production tolerances.</p> <p>Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.</p> <p>• Circled numbers refer to waveforms.</p> | <ul style="list-style-type: none"> • Abbreviation |
| <p>Components identified by mark or dot are critical for safety. Replace only with part number specified.</p> <p>Note :
Les composants identifiés par une marque sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.</p> | <p>CND : Canadian
AUS : Australian</p> | |

ation
Canadian
Australian

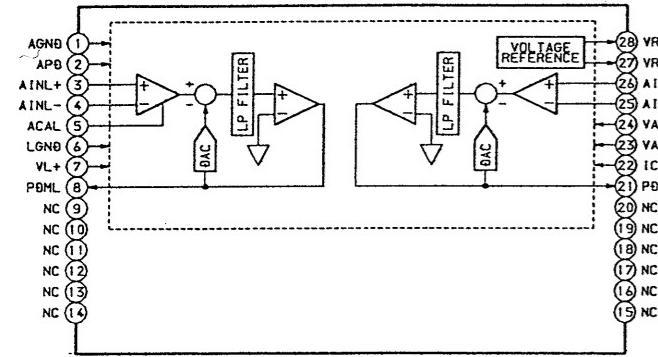
- Refer to page 35 for Waveforms.
- Refer to page 43 for IC Block Diagram

page 43 for IC Block Diagram

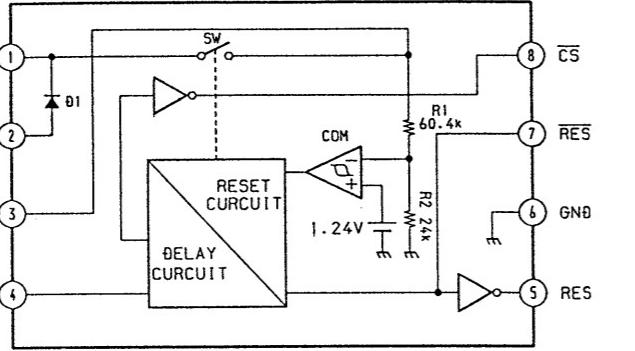


• ICBLOCK DIAGRAMS

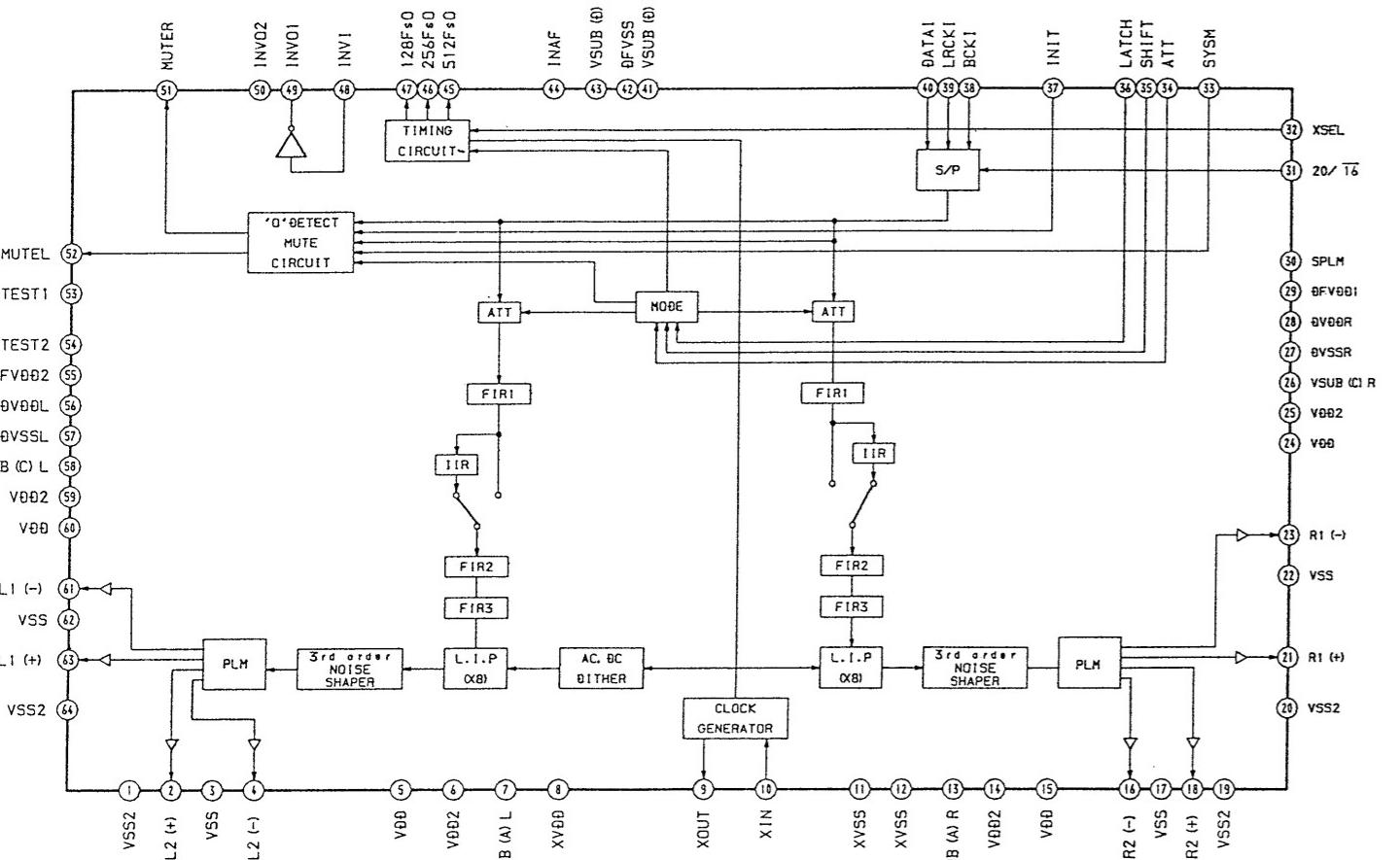
IC304 CXD8493M-E1



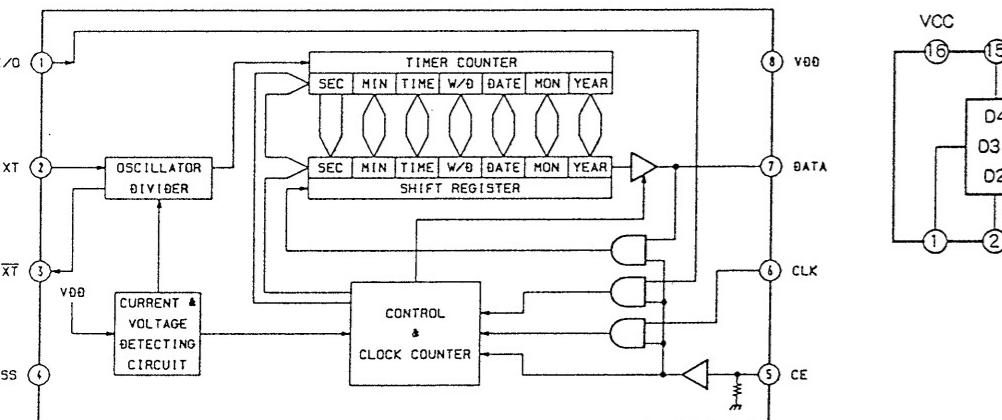
IC612 M62021FP-600C



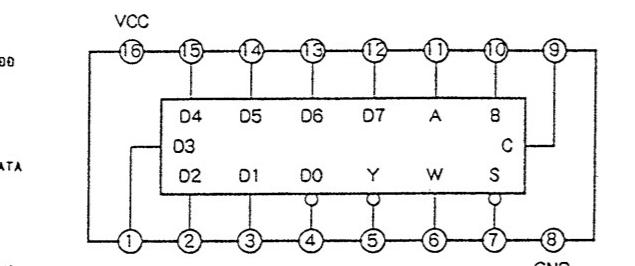
IC307 CXD8505AQ



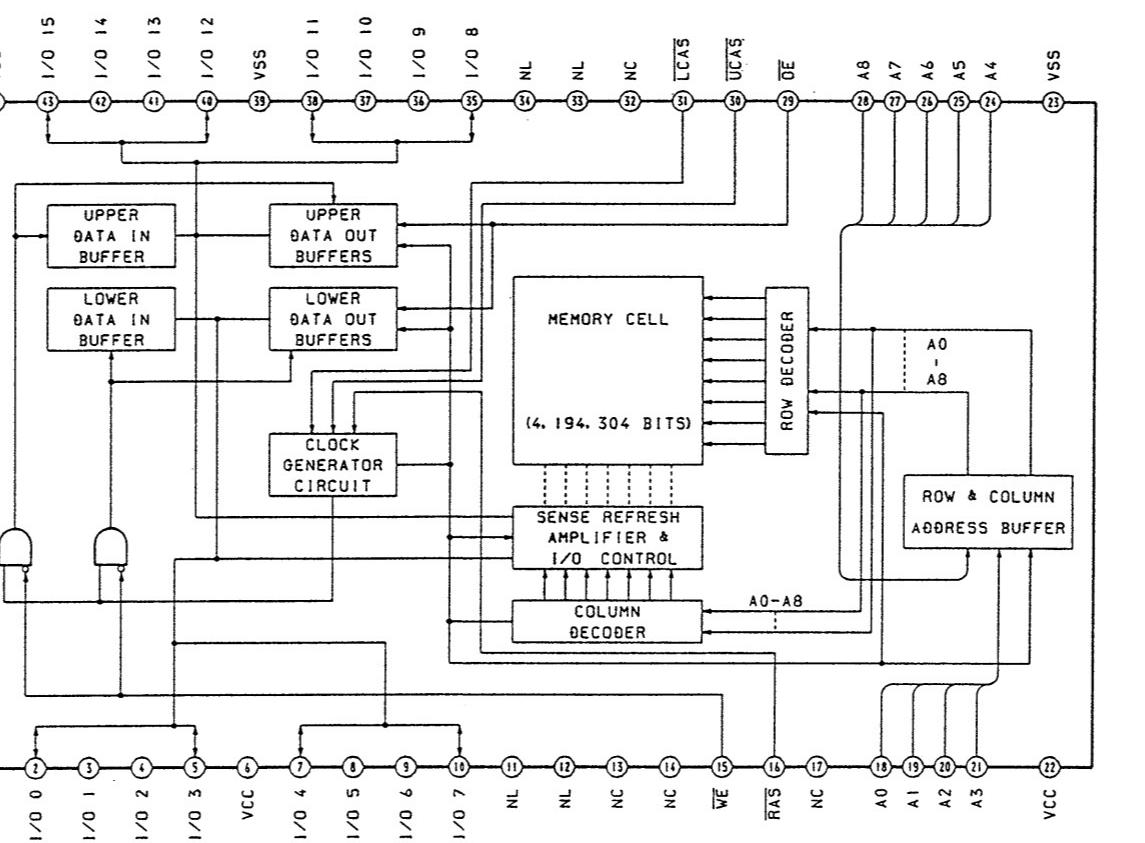
IC613 NJU6355EM-T1



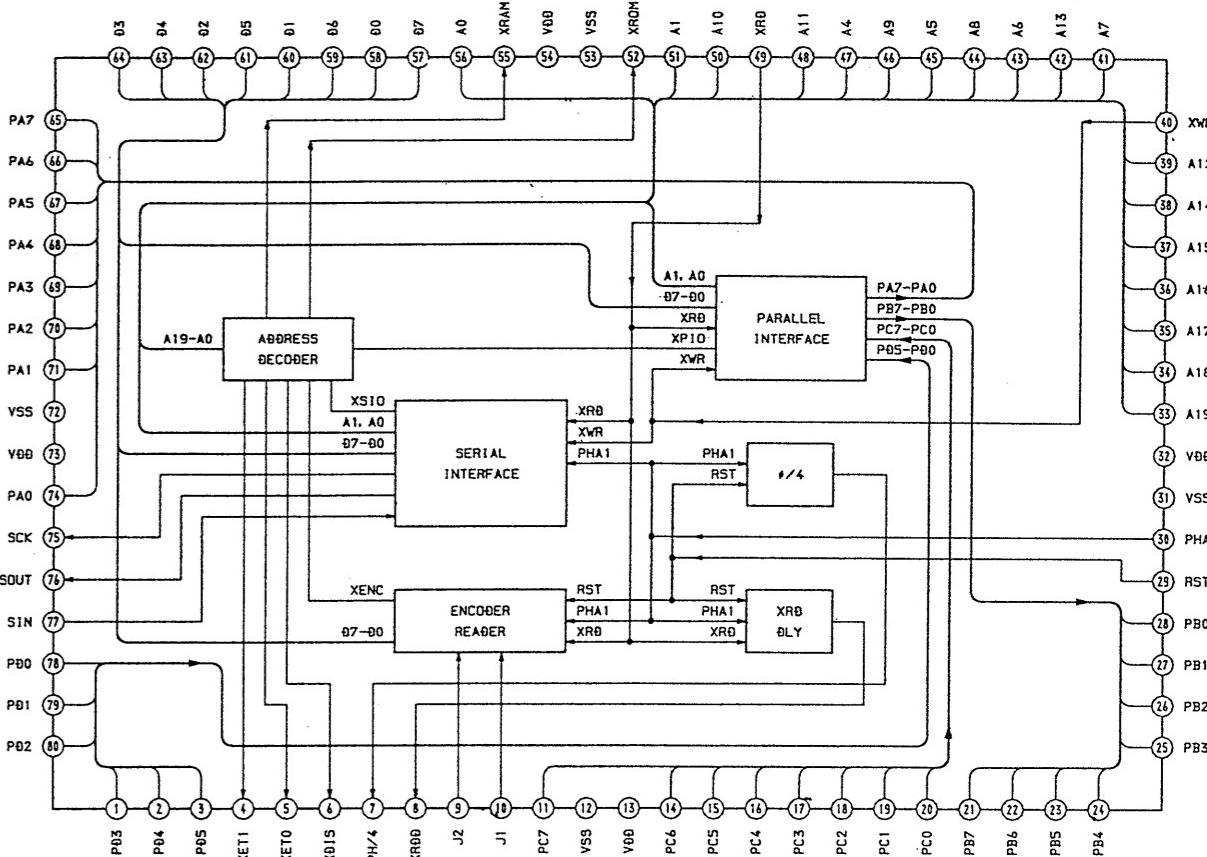
IC615 SN74HC151ANS-E20



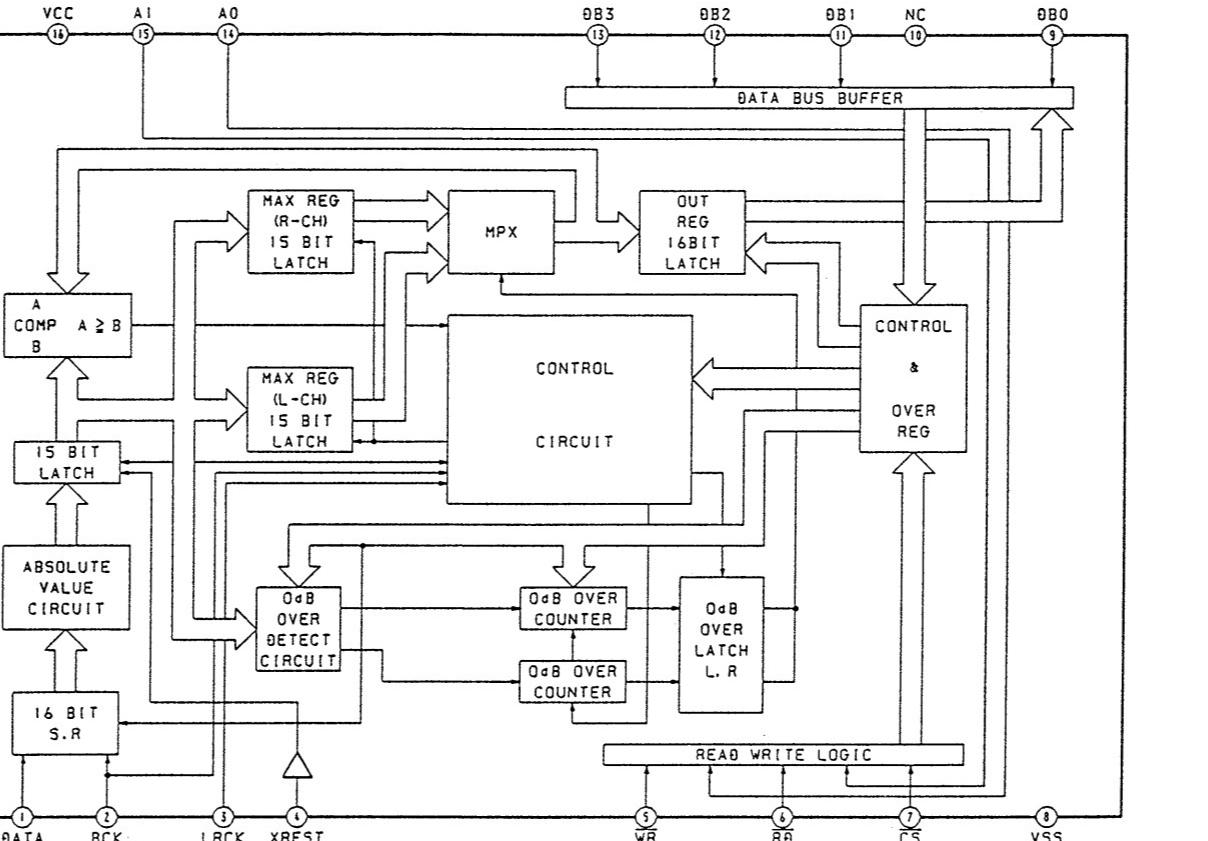
IC601, 603 M5M44260ATP-7L



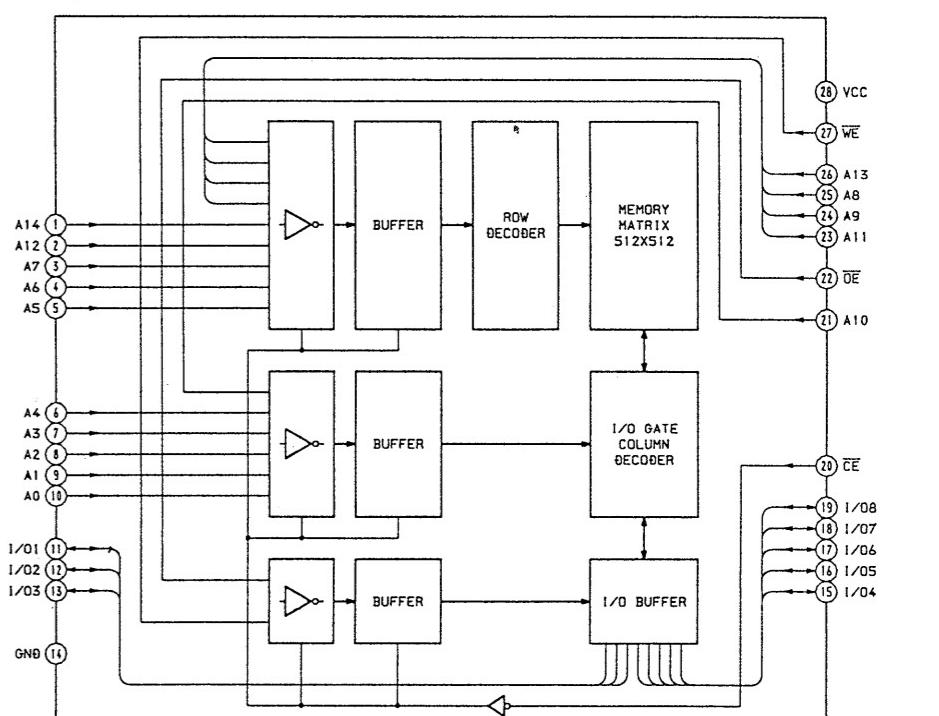
IC606 CXD8481Q

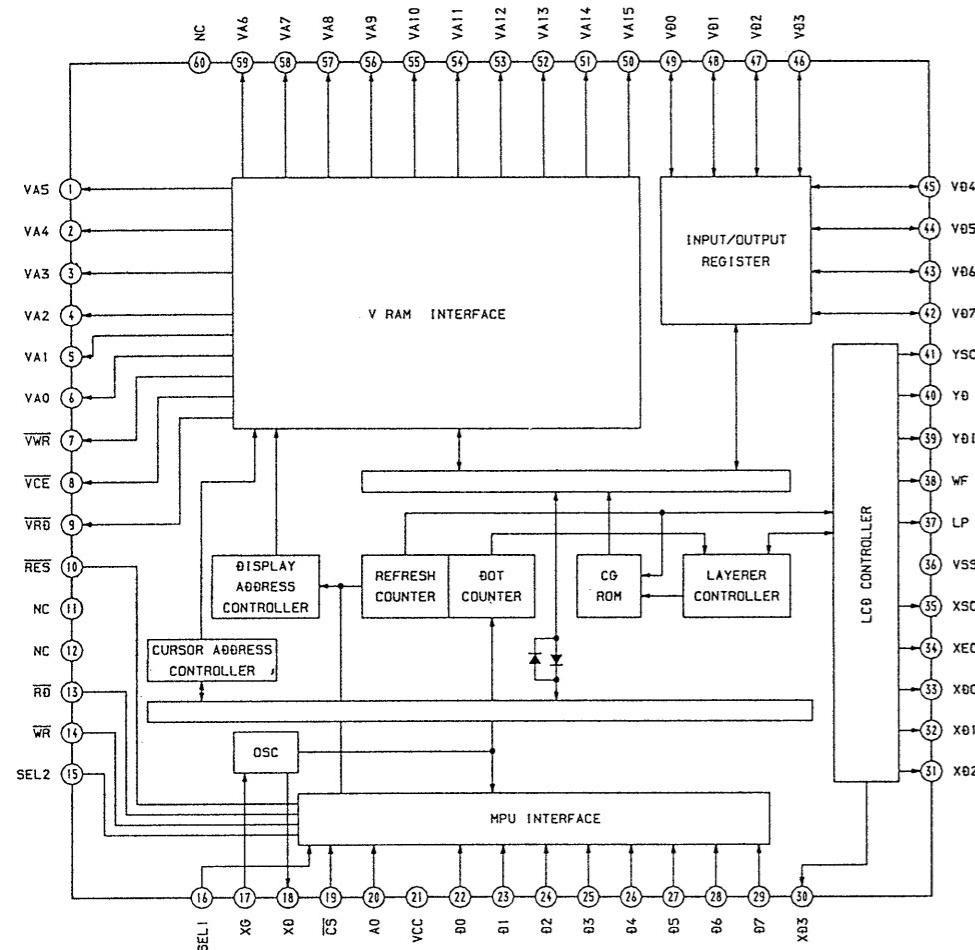
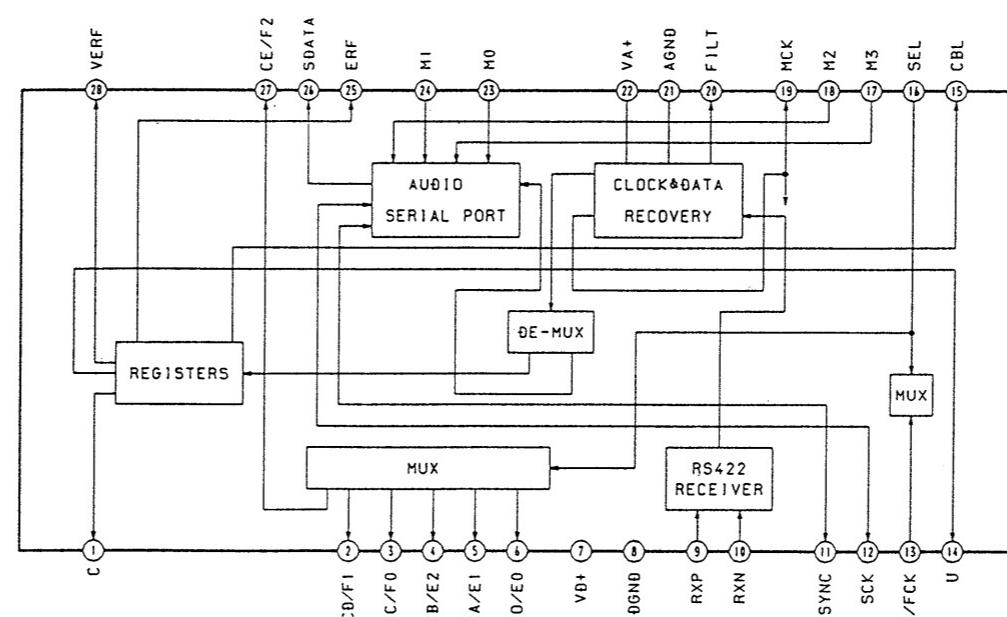
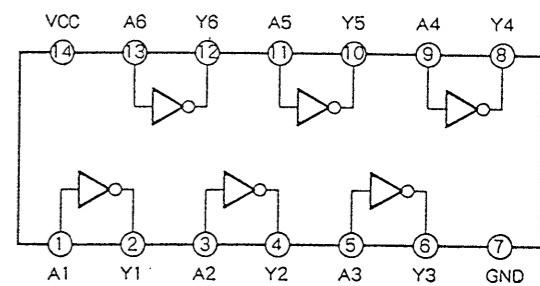
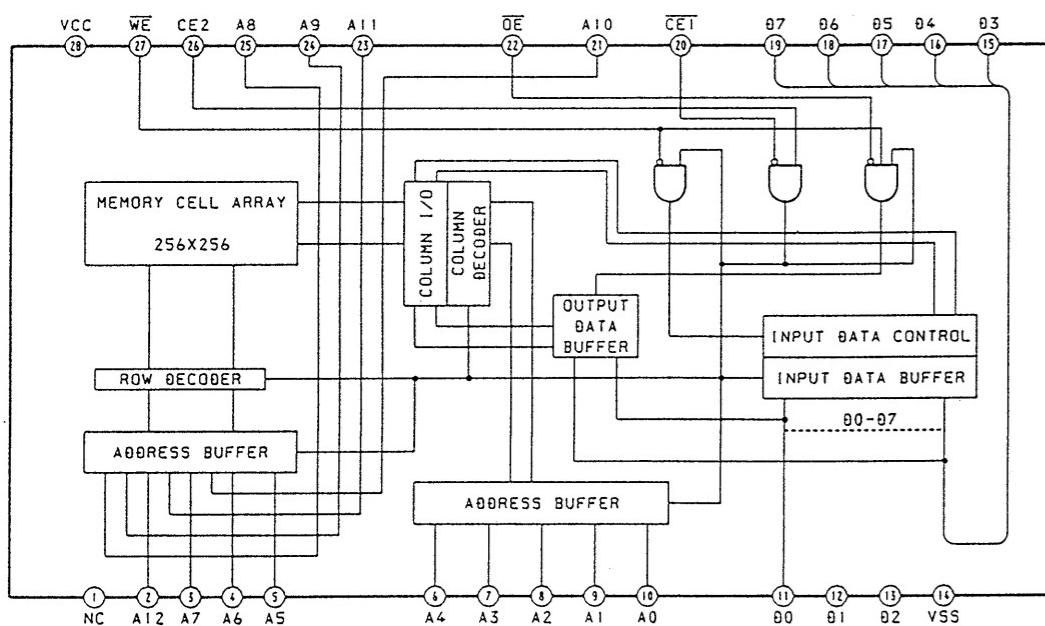
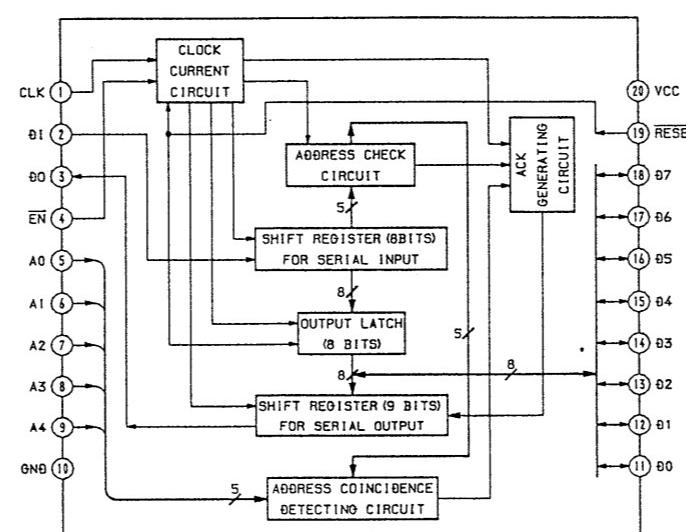
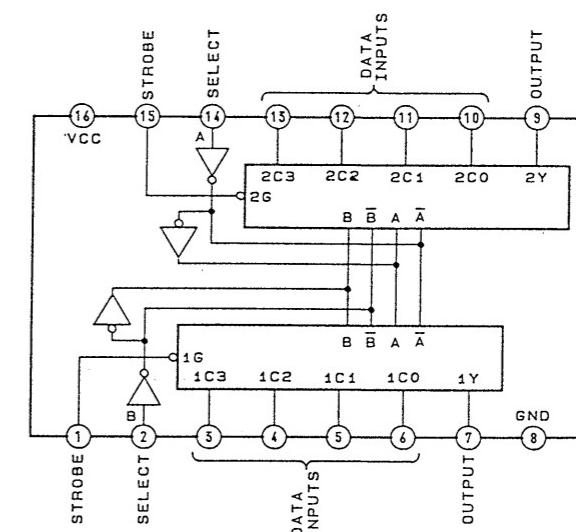


IC605 MSM6338RS

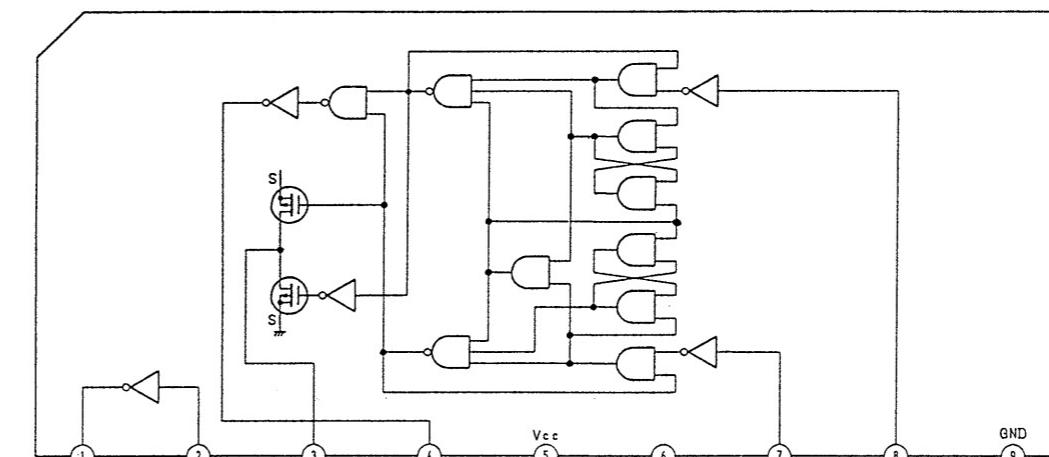


IC608, 609 CXK58257AM-10LL-T6



IC610 SED1335F0B**IC901 CS8412-CS****IC905 SN74HCU04ANS-E20****IC611 LC3564SM-10-TRM****IC903 M66009FP****IC906 SN74HC153ANS**

INPUTS	OUTPUT
G A B	Y
H X X	L
L L L	C0
L L H	C1
L H L	C2
L H H	C3

IC910 TC5081AP

SECTION 6 EXPLODED VIEWS

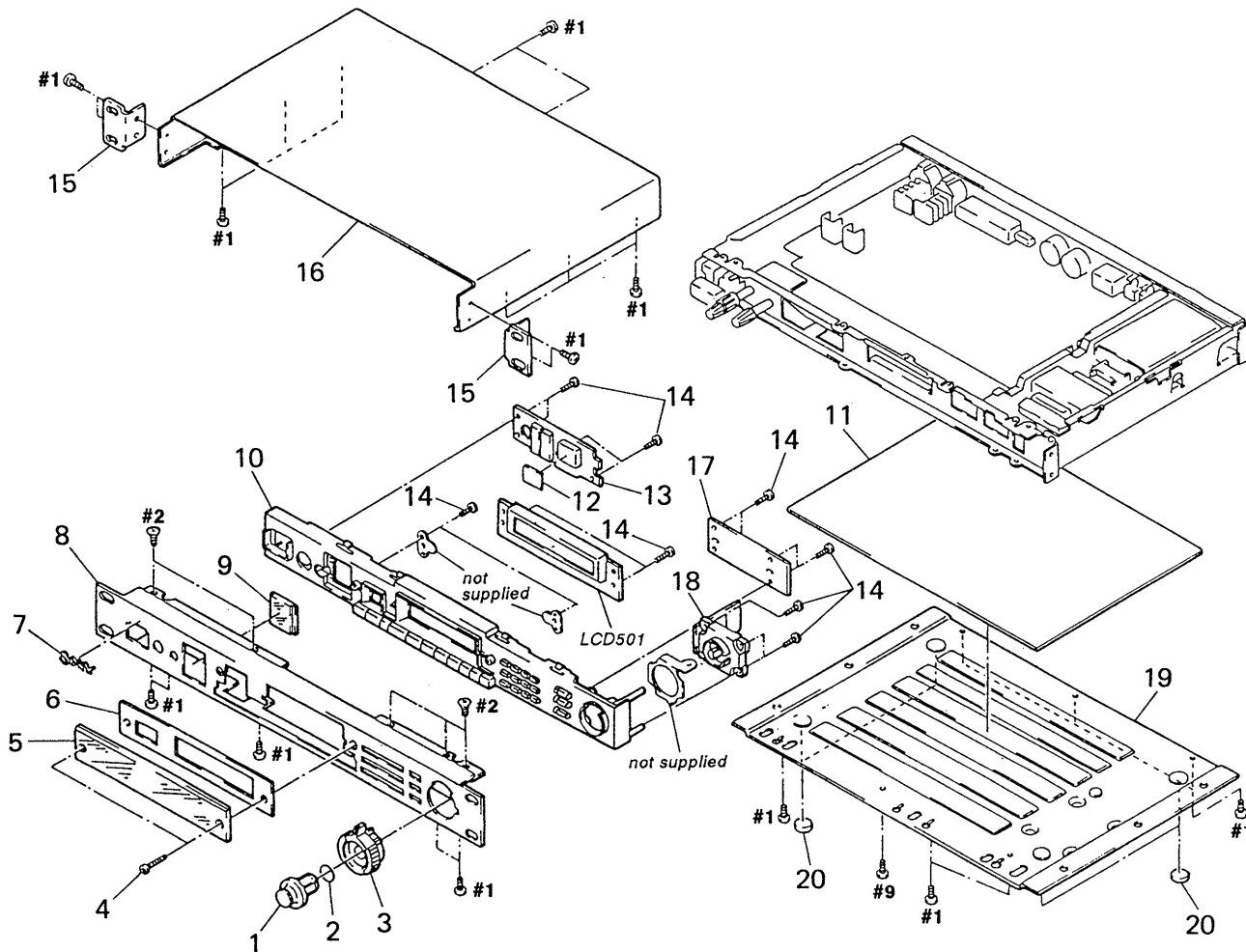
NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.
Replace only with part number specified.

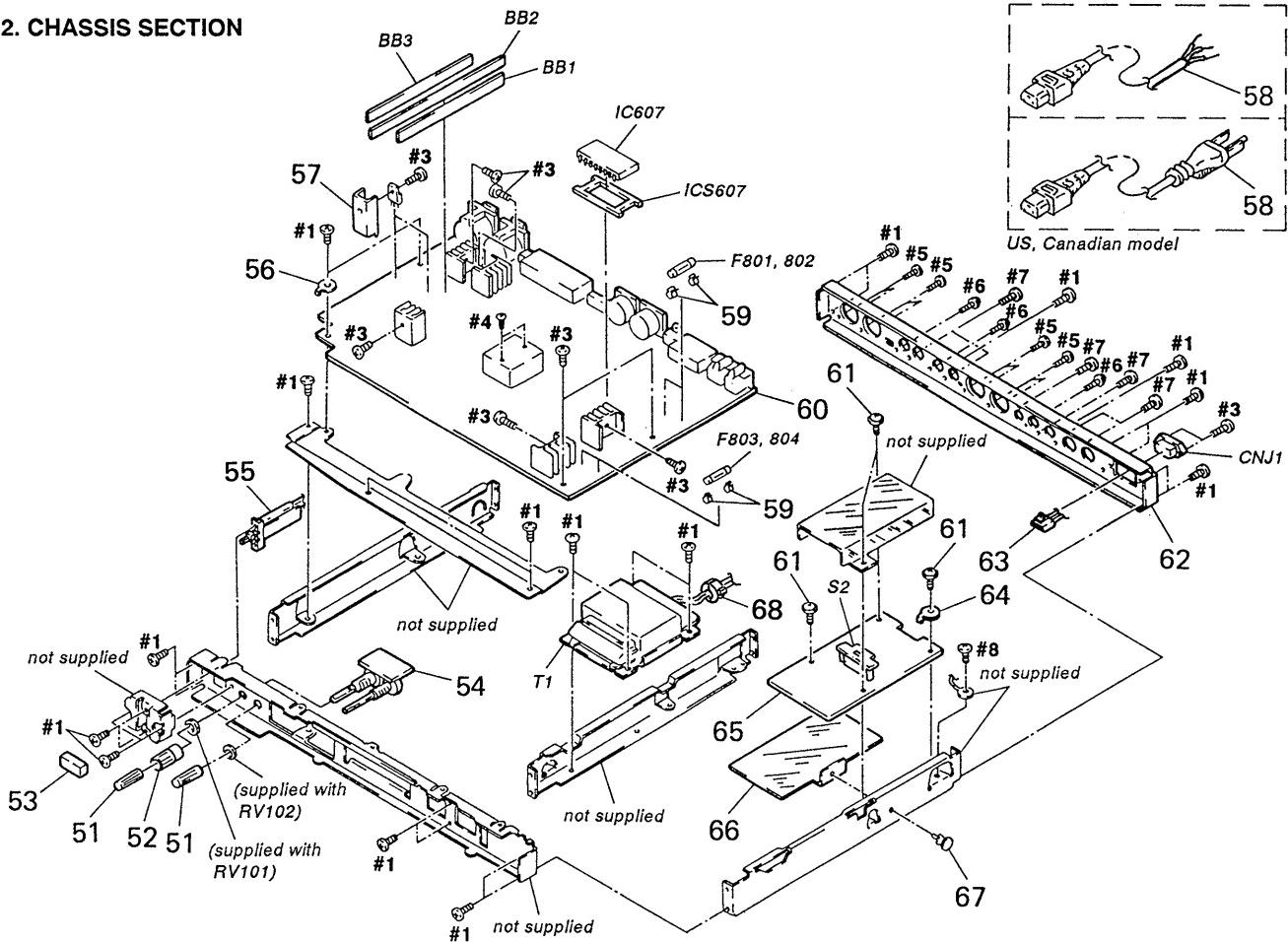
Les composants identifiés par une marque \triangle sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-973-987-01	KNOB (B)		12	4-973-990-01	FILTER	
2	4-973-995-02	STOPPER (B)		* 13	1-656-691-11	LED BOARD	
3	4-973-986-01	KNOB (A)		14	4-951-620-01	SCREW (2.6×8), +BVTP	
4	4-961-104-01	BOLT, HEXAGON SOCKET		* 15	4-916-305-01	REINFORCEMENT	
5	4-973-988-01	PLATE (A), INDICATION		16	4-916-342-32	CASE	
6	4-973-991-01	PLATE, ORNAMENTAL		* 17	1-656-692-11	10 KEY BOARD	
7	4-969-961-01	EMBLEM (NO. 4), SONY		* 18	1-656-693-11	ENCODER BOARD	
8	4-973-985-01	PANEL, FRONT		* 19	4-916-320-11	PLATE, BOTTOM	
9	4-973-989-01	PLATE (B), INDICATION		* 20	4-907-980-01	FOOT	
10	X-4946-025-1	BASE ASSY, PANEL	LCD501 1-810-771-11 DISPLAY PANEL, LIQUID CRYSTAL				
* 11	4-916-327-01	SHEET, INSULATING					

6-2. CHASSIS SECTION



The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-941-142-01	KNOB (A)		* BB3	1-580-302-11	BAR, BUS 4P	
52	4-941-136-01	KNOB (B)		\triangle CNJ1	1-580-375-21	INLET 3P (AC IN~)	
53	4-922-921-21	BUTTON (POWER)		\triangle F801	1-532-215-00	FUSE, TIME-LAG (T0.8A 250V)	(AEP, Australian)
* 54	1-656-694-11	VOL BOARD		\triangle F801	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	(US, Canadian)
\triangle 55	1-762-363-11	SWITCH, POWER (POWER)		\triangle F802	1-532-215-00	FUSE, TIME-LAG (T0.8A 250V)	(AEP, Australian)
56	1-537-770-21	TERMINAL BOARD, GROUND		\triangle F802	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	(US, Canadian)
* 57	4-875-327-01	HEAT SINK		\triangle F803	1-532-215-00	FUSE, TIME-LAG (T0.8A 250V)	(AEP, Australian)
\triangle 58	1-551-812-11	CORD, POWER (US, Canadian)		\triangle F803	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	(US, Canadian)
\triangle 58	1-590-910-11	CORD SET, POWER (AEP, Australian)		\triangle F804	1-532-215-00	FUSE, TIME-LAG (T0.8A 250V)	(AEP, Australian)
59	1-533-293-11	FUSE HOLDER		\triangle F804	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	(US, Canadian)
* 60	A-4377-982-A	MAIN BOARD, COMPLETE		IC607	8-759-350-85	IC TMS27C040-V77-E1	
61	4-886-821-01	SCREW, S TIGHT, +PTTWH 3×6		ICS607	1-540-107-11	SOCKET, IC 32P	
* 62	4-973-996-01	PANEL, BACK		\triangle S2	1-570-173-11	SELECTOR, POWER VOLTAGE	(VOLTAGE SELECTOR)
* 63	1-690-057-11	LEAD (WITH CONNECTOR) (2 CORE)		\triangle T1	1-429-097-11	TRANSFORMER, POWER (US, Canadian)	
* 64	4-870-539-00	PLATE, GROUND		\triangle T1	1-429-098-11	TRANSFORMER, POWER (AEP, Australian)	
* 65	1-656-690-11	PRIMARY BOARD					
* 66	4-916-303-01	SHOOT, INSULATING					
* 67	3-531-576-51	RIVET					
68	1-500-278-11	FILTER, CLAMP (FERRITE CORE)					
			(US, Canadian)				
* BB1	1-580-302-11	BAR, BUS 4P					
* BB2	1-566-940-11	BUS BAR 6P					

SECTION 7

ELECTRICAL PARTS LIST

10 KEY
ENCODER
LED **MAIN**
NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal oxide-film resistor
F : nonflammable

- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example :
uA.... : μ A.... , uPA.... : μ PA....
uPB.... : μ PB.... , uPC.... : μ PC....
uPD.... : μ PD....
- CAPACITORS
uF : μ F
- COILS
uH : μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-656-692-11	10 KEY BOARD	*****			< SWITCH >	
				S901	1-762-400-11	SWITCH (BANK)	
				S902	1-762-400-11	SWITCH (BYPASS)	*****
D903-917	8-719-016-74	DIODE	ISS352				
				*	A-4377-982-A	MAIN BOARD, COMPLETE	*****
				1-537-770-21	TERMINAL BOARD, GROUND		
				1-533-293-11	FUSE HOLDER		
						< BATTERY HOLDER >	
				BA601	1-550-414-21	HOLDER, BATTERY	
						< BUS BAR >	
				* BB1	1-580-302-11	BAR, BUS 4P	
				* BB2	1-566-940-11	BUS BAR 6P	
				* BB3	1-580-302-11	BAR, BUS 4P	
						< CAPACITOR >	
				C101	1-126-851-11	ELECT	22uF 20% 35V
				C102	1-126-851-11	ELECT	22uF 20% 35V
				C103	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
				C104	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
				C107-111			
					1-126-049-11	ELECT	22uF 20% 25V
				C113	1-163-038-91	CERAMIC CHIP	0.1uF 25V
				C114	1-163-038-91	CERAMIC CHIP	0.1uF 25V
				C115	1-136-153-00	FILM	0.01uF 5% 50V
				C117	1-126-049-11	ELECT	22uF 20% 25V
				C118	1-126-049-11	ELECT	22uF 20% 25V
				C201	1-126-851-11	ELECT	22uF 20% 35V
				C202	1-126-851-11	ELECT	22uF 20% 35V
				C203	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
				C204	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
				C207-211			
					1-126-049-11	ELECT	22uF 20% 25V
				C213	1-163-038-91	CERAMIC CHIP	0.1uF 25V
				C214	1-163-038-91	CERAMIC CHIP	0.1uF 25V

MAIN

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C215	1-136-153-00	FILM	0.01uF	5%	50V	C402	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C217	1-126-049-11	ELECT	22uF	20%	25V	C403	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C218	1-126-049-11	ELECT	22uF	20%	25V	C408	1-110-339-11	MYLAR	220PF	5%	50V
C301	1-136-165-00	FILM	0.1uF	5%	50V	C409	1-110-339-11	MYLAR	220PF	5%	50V
C302	1-136-169-00	FILM	0.22uF	5%	50V	C412	1-130-475-00	MYLAR	0.0022uF	5%	50V
C303	1-136-169-00	FILM	0.22uF	5%	50V	C413	1-130-471-00	MYLAR	0.001uF	5%	50V
C304	1-136-165-00	FILM	0.1uF	5%	50V	C416	1-126-049-11	ELECT	22uF	20%	25V
C305	1-124-443-00	ELECT	100uF	20%	10V	C417	1-126-049-11	ELECT	22uF	20%	25V
C306	1-124-443-00	ELECT	100uF	20%	10V	C422	1-126-024-11	ELECT	220uF	20%	16V
C310-313		1-163-038-91 CERAMIC CHIP	0.1uF		25V	C423	1-126-024-11	ELECT	220uF	20%	16V
C314	1-126-012-11	ELECT	470uF	20%	16V	C425	1-126-049-11	ELECT	22uF	20%	25V
C315	1-126-012-11	ELECT	470uF	20%	16V	C426	1-126-024-11	ELECT	220uF	20%	16V
C316	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C501	1-130-467-00	MYLAR	470PF	5%	50V
C317	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C502	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C318	1-124-472-11	ELECT	470uF	20%	10V	C503	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C319	1-124-472-11	ELECT	470uF	20%	10V	C508	1-110-339-11	MYLAR	220PF	5%	50V
C320	1-136-165-00	FILM	0.1uF	5%	50V	C509	1-110-339-11	MYLAR	220PF	5%	50V
C321	1-136-165-00	FILM	0.1uF	5%	50V	C512	1-130-475-00	MYLAR	0.0022uF	5%	50V
C322	1-124-472-11	ELECT	470uF	20%	10V	C513	1-130-471-00	MYLAR	0.001uF	5%	50V
C323	1-126-049-11	ELECT	22uF	20%	25V	C516	1-126-049-11	ELECT	22uF	20%	25V
C324	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C517	1-126-049-11	ELECT	22uF	20%	25V
C325	1-126-049-11	ELECT	22uF	20%	25V	C522	1-126-024-11	ELECT	220uF	20%	16V
C326-328		1-163-038-91 CERAMIC CHIP	0.1uF		25V	C523	1-126-024-11	ELECT	220uF	20%	16V
C329	1-124-472-11	ELECT	470uF	20%	10V	C525	1-126-049-11	ELECT	22uF	20%	25V
C330	1-124-443-00	ELECT	100uF	20%	10V	C526	1-126-024-11	ELECT	220uF	20%	16V
C331-333		1-163-038-91 CERAMIC CHIP	0.1uF		25V	C549	1-163-038-91 CERAMIC CHIP	0.1uF		25V	
C334	1-124-472-11	ELECT	470uF	20%	10V	C550	1-126-968-11	ELECT	100uF	20%	6.3V
C335	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C551	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C336	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C552	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C337	1-124-443-00	ELECT	100uF	20%	10V	C601	1-126-961-11	ELECT	2.2uF	20%	50V
C338	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C602-607					
C339	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C608	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C340	1-124-472-11	ELECT	470uF	20%	10V	C609	1-126-961-11	ELECT	2.2uF	20%	50V
C341	1-124-478-11	ELECT	100uF	20%	25V	C610	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C342	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C611	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C343	1-124-443-00	ELECT	100uF	20%	10V	C612	1-126-961-11	ELECT	2.2uF	20%	50V
C344	1-124-478-11	ELECT	100uF	20%	25V	C613-621	1-163-038-91 CERAMIC CHIP				
C345	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C623-627	1-163-038-91 CERAMIC CHIP				
C346	1-124-443-00	ELECT	100uF	20%	10V	C628	1-124-907-11	ELECT	10uF	20%	50V
C347	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	C629	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C348	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	C630	1-124-907-11	ELECT	10uF	20%	50V
C349	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	C631	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C350	1-163-038-91	CERAMIC CHIP	0.1uF		25V	C632	1-124-907-11	ELECT	10uF	20%	50V
C351	1-136-165-00	FILM	0.1uF	5%	50V	C633	1-126-968-11	ELECT	100uF	20%	6.3V
C352	1-124-443-00	ELECT	100uF	20%	10V	C634	1-126-961-11	ELECT	2.2uF	20%	50V
C401	1-130-467-00	MYLAR	470PF	5%	50V	C635	1-163-038-91	CERAMIC CHIP	0.1uF		25V

MAIN

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C636	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	C915	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C638	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	C916	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C639	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	C918	1-136-153-00	FILM	0.01uF	5%	50V
C640	1-163-038-91	CERAMIC CHIP	0.1uF	25V		C919	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C641-643						C920	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
	1-164-232-11	CERAMIC CHIP	0.01uF	50V		C921	1-124-478-11	ELECT	100uF	20%	25V
C645-649						C922	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
	1-163-038-91	CERAMIC CHIP	0.1uF	25V		C923	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C650	1-124-907-11	ELECT	10uF	20%	50V	C924	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C651	1-163-038-91	CERAMIC CHIP	0.1uF	25V		C925	1-136-157-00	FILM	0.022uF	5%	50V
C652	1-163-038-91	CERAMIC CHIP	0.1uF	25V		C926	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C653	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	C927	1-136-173-00	FILM	0.47uF	5%	50V
C654	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	C929	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C655-657						C930	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
	1-124-907-11	ELECT	10uF	20%	50V	C931	1-124-478-11	ELECT	100uF	20%	25V
C658	1-126-968-11	ELECT	100uF	20%	6.3V	C932	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C801	1-128-549-11	ELECT	3300uF	20%	35V	C933	1-124-472-11	ELECT	470uF	20%	10V
C802	1-128-549-11	ELECT	3300uF	20%	35V	C935	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
C803-806						C1002	1-163-038-91	CERAMIC CHIP	0.1uF	25V	
	1-163-038-91	CERAMIC CHIP	0.1uF	25V							
C807	1-126-027-11	ELECT	1000uF	20%	25V						
C808	1-126-027-11	ELECT	1000uF	20%	25V						
C809	1-126-946-11	ELECT	6800uF	20%	16V	CN101	1-691-768-11	PLUG (MICRO CONNECTOR) 6P			
C810	1-163-038-91	CERAMIC CHIP	0.1uF	25V		CN103	1-691-768-31	PLUG (MICRO CONNECTOR) 6P			
C811	1-163-038-91	CERAMIC CHIP	0.1uF	25V		CN601	1-750-971-11	CONNECTOR, DIN 5P (MIDI)			
C812	1-124-999-11	ELECT	2200uF	20%	10V	* CN602	1-506-503-11	PIN, CONNECTOR 9P			
C813	1-126-946-11	ELECT	6800uF	20%	16V	* CN603	1-564-341-11	PIN, CONNECTOR 7P			
C814	1-163-038-91	CERAMIC CHIP	0.1uF	25V		* CN604	1-564-342-11	PIN, CONNECTOR 8P			
C815	1-163-038-91	CERAMIC CHIP	0.1uF	25V		* CN605	1-564-342-61	PIN, CONNECTOR 8P			
C816	1-124-999-11	ELECT	2200uF	20%	10V	* CN606	1-568-839-11	SOCKET, CONNECTOR 23P			
C817	1-126-967-11	ELECT	47uF	20%	35V	* CN801	1-560-064-00	PIN, CONNECTOR 6P			
C818	1-124-477-11	ELECT	47uF	20%	25V	* CN901	1-569-003-11	SOCKET, CONNECTOR 8P (DIGITAL I/O)			
C819	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V						
C820	1-126-105-11	ELECT	1000uF	20%	35V						
C821	1-126-105-11	ELECT	1000uF	20%	35V	D301	8-719-420-90	DIODE	MA8051-M		
C901	1-163-038-91	CERAMIC CHIP	0.1uF	25V		D302	8-719-420-90	DIODE	MA8051-M		
C902	1-163-038-91	CERAMIC CHIP	0.1uF	25V		D601-605					
C903	1-163-251-11	CERAMIC CHIP	100PF	5%	50V		8-719-016-74	DIODE	ISS352		
C904	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	D606	8-719-800-76	DIODE	ISS226		
C905	1-163-038-91	CERAMIC CHIP	0.1uF	25V		D607	8-719-800-76	DIODE	ISS226		
C906	1-163-038-91	CERAMIC CHIP	0.1uF	25V							
C907	1-126-049-11	ELECT	22uF	20%	25V	D801-808					
C908	1-136-161-00	FILM	0.047uF	5%	50V		8-719-200-02	DIODE	10E2		
C909	1-163-038-91	CERAMIC CHIP	0.1uF	25V		D809	8-719-210-33	DIODE	EC10DS2		
C910	1-126-049-11	ELECT	22uF	20%	25V	D810	8-719-210-33	DIODE	EC10DS2		
C911	1-163-038-91	CERAMIC CHIP	0.1uF	25V		D811-813					
C912	1-163-038-91	CERAMIC CHIP	0.1uF	25V			8-719-016-74	DIODE	ISS352		
C913	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	D901	8-719-016-74	DIODE	ISS352		
C914	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	D902	8-719-928-03	DIODE	KV1260M		

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark				
< FUSE >											
△F801	1-532-215-00	FUSE, TIME-LAG (T0. 8A 250V)	(AEP, Australian)	IC804	8-759-701-56	IC NJM78M05FA					
△F801	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	(US, Canadian)	IC901	8-759-355-06	IC CS8412-CS					
△F802	1-532-215-00	FUSE, TIME-LAG (T0. 8A 250V)	(AEP, Australian)	IC902	8-759-330-78	IC CS8402A-CS-E1					
△F802	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	(US, Canadian)	IC903	8-759-191-15	IC M66009FP					
△F803	1-532-215-00	FUSE, TIME-LAG (T0. 8A 250V)	(AEP, Australian)	IC904	8-759-232-74	IC TC74HC163AF					
△F803	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	(US, Canadian)	IC905	8-759-269-92	IC SN74HCU04ANS-E20					
△F804	1-532-215-00	FUSE, TIME-LAG (T0. 8A 250V)	(AEP, Australian)	IC906	8-759-926-17	IC SN74HC153ANS					
△F804	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	(US, Canadian)	IC907	8-759-232-74	IC TC74HC163AF					
< IC >											
IC101-107	8-759-711-82	IC NJM4580E		IC301	8-759-701-56	IC NJM78M05FA					
IC302	8-759-701-65	IC NJM79M05FA		IC303	8-759-701-56	IC NJM78M05FA					
IC304	8-759-330-53	IC CXD8493M-E1		IC305	8-759-196-21	IC CXD8482Q					
IC306	8-759-711-82	IC NJM4580E		IC307	8-759-334-75	IC CXD8505Q					
IC401-404	8-759-711-82	IC NJM4580E		IC501-504	8-759-711-82	IC NJM4580E					
IC601	8-759-283-51	IC M5M44260ATP-7L		IC602	8-752-362-00	IC CXD2707Q					
IC603	8-759-283-51	IC M5M44260ATP-7L		IC604	8-752-362-00	IC CXD2707Q					
IC605	8-759-995-09	IC MSM6338RS		IC606	8-759-188-95	IC CXD8481Q					
IC607	8-759-350-85	IC TMS27C040-V77-E1		IC608	8-752-337-79	IC CXK58257AM-10LL-T6					
IC609	8-752-337-79	IC CXK58257AM-10LL-T6		IC610	8-759-188-96	IC SED1335FOB					
IC611	8-759-336-84	IC LC3564SM-10-TRM		IC612	8-759-637-07	IC M62021FP-600C					
IC613	8-759-188-93	IC NJU6355EM-T1		IC614	8-759-283-49	IC HD6413002F10					
IC615	8-759-269-44	IC SN74HC151ANS-E20		IC801	8-759-982-36	IC RC78M15FA					
IC802	8-759-701-70	IC NJM79M15FA		IC803	8-759-701-56	IC NJM78M05FA					
< SOCKET >											
ICS607 1-540-107-11 SOCKET, IC 32P											
< JACK >											
J101	1-568-006-11	CONNECTOR, XLR TYPE 3P (INPUT, BALANCED (CH1))		J102	1-568-005-11	CONNECTOR, XLR TYPE 3P (OUTPUT, BALANCED (CH1))					
J103	1-580-041-11	JACK, LARGE (2 GANG) (INPUT, UNBALANCED)		J104	1-750-973-11	JACK (LARGE TYPE) (2 GANG) (OUTPUT, UNBALANCED)					
J201	1-568-006-11	CONNECTOR, XLR TYPE 3P (INPUT, BALANCED (CH2))		J202	1-568-005-11	CONNECTOR, XLR TYPE 3P (OUTPUT, BALANCED (CH2))					
J601	1-750-973-11	JACK (LARGE TYPE) (2 GANG) (PEDAL)		< COIL >							
L301	1-410-369-11	INDUCTOR CHIP 1uH		L302	1-410-377-31	INDUCTOR CHIP 4.7uH					
L601-615	1-410-377-31	INDUCTOR CHIP 4.7uH		L617-620	1-414-235-11	INDUCTOR, FERRITE BEAD					
L621	1-410-377-31	INDUCTOR CHIP 4.7uH		L901-908	1-410-377-31	INDUCTOR CHIP 4.7uH					
L909	1-410-397-21	FERRITE BEAD INDUCTOR		L910	1-410-377-31	INDUCTOR CHIP 4.7uH					
L911	1-426-850-11	COIL (RF)		L912-915	1-236-129-11	ENCAPSULATED COMPONENT					
< PHOTO COUPLER >											
PC601	8-749-924-62	PHOTO COUPLER PC410									

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< TRANSISTOR >							
Q101	8-729-422-29	TRANSISTOR	2SD601A-S	R117	1-260-008-11	CARBON MELF	10K 2% 1/8W
Q102	8-729-422-29	TRANSISTOR	2SD601A-S	R118	1-260-004-11	CARBON MELF	4.7K 2% 1/8W
Q201	8-729-422-29	TRANSISTOR	2SD601A-S	R119	1-259-979-11	CARBON MELF	47 2% 1/8W
Q202	8-729-422-29	TRANSISTOR	2SD601A-S	R120	1-259-979-11	CARBON MELF	47 2% 1/8W
Q301	8-729-205-38	TRANSISTOR	2SK208-Y	R121-123	1-259-991-11	CARBON MELF	470 2% 1/8W
Q302	8-729-808-01	TRANSISTOR	2SD1622-S	R124	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q303	8-729-205-38	TRANSISTOR	2SK208-Y	R125	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q304	8-729-808-01	TRANSISTOR	2SD1622-S	R126	1-260-004-11	CARBON MELF	4.7K 2% 1/8W
Q601-605				R127	1-260-004-11	CARBON MELF	4.7K 2% 1/8W
	8-729-805-65	TRANSISTOR	2SA1344	R128	1-260-016-11	CARBON MELF	47K 2% 1/8W
Q606-614				R129	1-260-020-11	CARBON MELF	100K 2% 1/8W
	8-729-805-41	TRANSISTOR	2SC3398	R201	1-260-016-11	CARBON MELF	47K 2% 1/8W
Q615	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R202	1-260-016-11	CARBON MELF	47K 2% 1/8W
Q616	8-729-422-29	TRANSISTOR	2SD601A-S	R203-206	1-260-012-11	CARBON MELF	22K 2% 1/8W
Q617	8-729-422-29	TRANSISTOR	2SD601A-S	R207	1-259-999-11	CARBON MELF	2.2K 2% 1/8W
Q618	8-729-805-41	TRANSISTOR	2SC3398	R208	1-260-016-11	CARBON MELF	47K 2% 1/8W
Q619	8-729-805-65	TRANSISTOR	2SA1344	R209	1-260-016-11	CARBON MELF	47K 2% 1/8W
Q620	8-729-805-41	TRANSISTOR	2SC3398	R210	1-260-002-11	CARBON MELF	3.3K 2% 1/8W
Q621	8-729-805-65	TRANSISTOR	2SA1344	R211	1-260-020-11	CARBON MELF	100K 2% 1/8W
Q622	8-729-805-41	TRANSISTOR	2SC3398	R212	1-260-020-11	CARBON MELF	100K 2% 1/8W
Q623	8-729-805-65	TRANSISTOR	2SA1344	R213	1-260-008-11	CARBON MELF	10K 2% 1/8W
Q624	8-729-805-41	TRANSISTOR	2SC3398	R214	1-260-008-11	CARBON MELF	10K 2% 1/8W
Q625	8-729-805-65	TRANSISTOR	2SA1344	R215	1-260-004-11	CARBON MELF	4.7K 2% 1/8W
Q626	8-729-422-29	TRANSISTOR	2SD601A-S	R216	1-260-008-11	CARBON MELF	10K 2% 1/8W
Q627	8-729-805-65	TRANSISTOR	2SA1344	R217	1-260-008-11	CARBON MELF	10K 2% 1/8W
Q628	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R218	1-260-004-11	CARBON MELF	4.7K 2% 1/8W
Q629	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R219	1-259-979-11	CARBON MELF	47 2% 1/8W
Q630	8-729-805-65	TRANSISTOR	2SA1344	R220	1-259-979-11	CARBON MELF	47 2% 1/8W
Q901-903				R221-223	1-259-991-11	CARBON MELF	470 2% 1/8W
	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R224	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q904	8-729-232-07	TRANSISTOR	2SK302-Y	R225	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
Q905	8-729-232-07	TRANSISTOR	2SK302-Y	R226	1-260-004-11	CARBON MELF	4.7K 2% 1/8W
< RESISTOR >							
R101	1-260-016-11	CARBON MELF	47K 2% 1/8W	R227	1-260-004-11	CARBON MELF	4.7K 2% 1/8W
R102	1-260-016-11	CARBON MELF	47K 2% 1/8W	R228	1-260-016-11	CARBON MELF	47K 2% 1/8W
R103-106				R229	1-260-020-11	CARBON MELF	100K 2% 1/8W
	1-260-012-11	CARBON MELF	22K 2% 1/8W	R301	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R107	1-259-999-11	CARBON MELF	2.2K 2% 1/8W	R302	1-216-025-91	METAL GLAZE	100 5% 1/10W
R108	1-260-016-11	CARBON MELF	47K 2% 1/8W	R303	1-216-013-00	METAL CHIP	33 5% 1/10W
R109	1-260-016-11	CARBON MELF	47K 2% 1/8W	R305-311	1-216-041-00	METAL CHIP	470 5% 1/10W
R110	1-260-002-11	CARBON MELF	3.3K 2% 1/8W	R314	1-216-033-00	METAL CHIP	220 5% 1/10W
R111	1-260-020-11	CARBON MELF	100K 2% 1/8W	R315	1-216-025-91	METAL GLAZE	100 5% 1/10W
R112	1-260-020-11	CARBON MELF	100K 2% 1/8W	R316	1-216-025-91	METAL GLAZE	100 5% 1/10W
R113	1-260-008-11	CARBON MELF	10K 2% 1/8W	R317	1-216-033-00	METAL CHIP	220 5% 1/10W
R114	1-260-008-11	CARBON MELF	10K 2% 1/8W	R318	1-216-025-91	METAL GLAZE	100 5% 1/10W
R115	1-260-004-11	CARBON MELF	4.7K 2% 1/8W	R319	1-216-025-91	METAL GLAZE	100 5% 1/10W
R116	1-260-008-11	CARBON MELF	10K 2% 1/8W				

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R320	1-216-017-91	METAL GLAZE	47 5% 1/10W	R516	1-216-254-00	CARBON MELF	220K 2% 1/8W
R322-324	1-216-041-00	METAL CHIP	470 5% 1/10W	R517	1-260-008-11	CARBON MELF	10K 2% 1/8W
R325	1-216-017-91	METAL GLAZE	47 5% 1/10W	R518	1-260-008-11	CARBON MELF	10K 2% 1/8W
R326	1-216-017-91	METAL GLAZE	47 5% 1/10W	R519	1-260-004-11	CARBON MELF	4.7K 2% 1/8W
R327	1-216-041-00	METAL CHIP	470 5% 1/10W	R520	1-260-008-11	CARBON MELF	10K 2% 1/8W
R328	1-216-017-91	METAL GLAZE	47 5% 1/10W	R521	1-260-008-11	CARBON MELF	10K 2% 1/8W
R329	1-216-017-91	METAL GLAZE	47 5% 1/10W	R522	1-260-004-11	CARBON MELF	4.7K 2% 1/8W
R330	1-216-121-91	METAL GLAZE	1M 5% 1/10W	R523	1-260-028-11	CARBON MELF	470K 2% 1/8W
R401-404	1-249-427-11	CARBON	6.8K 5% 1/4W	R524	1-260-028-11	CARBON MELF	470K 2% 1/8W
R405	1-260-004-11	CARBON MELF	4.7K 2% 1/8W	R525	1-259-991-11	CARBON MELF	470 2% 1/8W
R406	1-260-004-11	CARBON MELF	4.7K 2% 1/8W	R526	1-259-991-11	CARBON MELF	470 2% 1/8W
R407	1-260-012-11	CARBON MELF	22K 2% 1/8W	R527	1-259-983-11	CARBON MELF	100 2% 1/8W
R408	1-260-012-11	CARBON MELF	22K 2% 1/8W	R528	1-259-983-11	CARBON MELF	100 2% 1/8W
R409-412	1-259-999-11	CARBON MELF	2.2K 2% 1/8W	R529	1-260-008-11	CARBON MELF	10K 2% 1/8W
R414	1-259-999-11	CARBON MELF	2.2K 2% 1/8W	R530	1-260-008-11	CARBON MELF	10K 2% 1/8W
R415	1-259-999-11	CARBON MELF	2.2K 2% 1/8W	R531	1-260-016-11	CARBON MELF	47K 2% 1/8W
R416	1-216-254-00	CARBON MELF	220K 2% 1/8W	R532	1-260-002-11	CARBON MELF	3.3K 2% 1/8W
R417	1-260-008-11	CARBON MELF	10K 2% 1/8W	R533	1-260-028-11	CARBON MELF	470K 2% 1/8W
R418	1-260-008-11	CARBON MELF	10K 2% 1/8W	R534	1-259-991-11	CARBON MELF	470 2% 1/8W
R419	1-260-004-11	CARBON MELF	4.7K 2% 1/8W	R535	1-259-983-11	CARBON MELF	100 2% 1/8W
R420	1-260-008-11	CARBON MELF	10K 2% 1/8W	R536	1-260-020-11	CARBON MELF	100K 2% 1/8W
R421	1-260-008-11	CARBON MELF	10K 2% 1/8W	R601	1-216-001-00	METAL CHIP	10 5% 1/10W
R422	1-260-004-11	CARBON MELF	4.7K 2% 1/8W	R602	1-216-033-00	METAL CHIP	220 5% 1/10W
R423	1-260-028-11	CARBON MELF	470K 2% 1/8W	R603	1-216-033-00	METAL CHIP	220 5% 1/10W
R424	1-260-028-11	CARBON MELF	470K 2% 1/8W	R604-610	1-216-041-00	METAL CHIP	470 5% 1/10W
R425	1-259-991-11	CARBON MELF	470 2% 1/8W	R612-616	1-216-041-00	METAL CHIP	470 5% 1/10W
R426	1-259-991-11	CARBON MELF	470 2% 1/8W	R617	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R427	1-259-983-11	CARBON MELF	100 2% 1/8W	R618	1-216-001-00	METAL CHIP	10 5% 1/10W
R428	1-259-983-11	CARBON MELF	100 2% 1/8W	R619	1-216-033-00	METAL CHIP	220 5% 1/10W
R429	1-260-008-11	CARBON MELF	10K 2% 1/8W	R620	1-216-033-00	METAL CHIP	220 5% 1/10W
R430	1-260-008-11	CARBON MELF	10K 2% 1/8W	R621-633	1-216-041-00	METAL CHIP	470 5% 1/10W
R431	1-260-016-11	CARBON MELF	47K 2% 1/8W	R634	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R432	1-260-002-11	CARBON MELF	3.3K 2% 1/8W	R635-637	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R433	1-260-028-11	CARBON MELF	470K 2% 1/8W	R638	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R434	1-259-991-11	CARBON MELF	470 2% 1/8W	R639	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R435	1-259-983-11	CARBON MELF	100 2% 1/8W	R640-643	1-216-037-00	METAL CHIP	330 5% 1/10W
R436	1-260-020-11	CARBON MELF	100K 2% 1/8W	R644-646	1-216-033-00	METAL CHIP	220 5% 1/10W
R501-504	1-249-427-11	CARBON	6.8K 5% 1/4W	R647	1-216-037-00	METAL CHIP	330 5% 1/10W
R505	1-260-004-11	CARBON MELF	4.7K 2% 1/8W	R648	1-216-073-00	METAL CHIP	10K 5% 1/10W
R506	1-260-004-11	CARBON MELF	4.7K 2% 1/8W	R649	1-216-073-00	METAL CHIP	10K 5% 1/10W
R507	1-260-012-11	CARBON MELF	22K 2% 1/8W	R650-653	1-216-041-00	METAL CHIP	470 5% 1/10W
R508	1-260-012-11	CARBON MELF	22K 2% 1/8W	R654	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R509-512	1-259-999-11	CARBON MELF	2.2K 2% 1/8W	R655	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R514	1-259-999-11	CARBON MELF	2.2K 2% 1/8W				
R515	1-259-999-11	CARBON MELF	2.2K 2% 1/8W				

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R656-682	1-216-041-00	METAL CHIP	470 5% 1/10W	R906	1-216-017-91	METAL GLAZE	47 5% 1/10W
△R683	1-219-212-11	FUSIBLE	15 5% 1/8W F	R907	1-216-033-00	METAL CHIP	220 5% 1/10W
△R684	1-219-212-11	FUSIBLE	15 5% 1/8W F	R908	1-216-033-00	METAL CHIP	220 5% 1/10W
R685-688	1-216-041-00	METAL CHIP	470 5% 1/10W	R909	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R689	1-216-073-00	METAL CHIP	10K 5% 1/10W	R915	1-216-033-00	METAL CHIP	220 5% 1/10W
R690	1-216-017-91	METAL GLAZE	47 5% 1/10W	R916	1-216-041-00	METAL CHIP	470 5% 1/10W
R691	1-216-073-00	METAL CHIP	10K 5% 1/10W	R917	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R692	1-216-073-00	METAL CHIP	10K 5% 1/10W	R918	1-216-017-91	METAL GLAZE	47 5% 1/10W
R693	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R919	1-216-017-91	METAL GLAZE	47 5% 1/10W
R694	1-216-073-00	METAL CHIP	10K 5% 1/10W	R920	1-216-041-00	METAL CHIP	470 5% 1/10W
R695	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R921	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R696	1-216-073-00	METAL CHIP	10K 5% 1/10W	R922	1-216-017-91	METAL GLAZE	47 5% 1/10W
R697	1-216-097-91	METAL GLAZE	100K 5% 1/10W	R923-925			
R698	1-216-097-91	METAL GLAZE	100K 5% 1/10W	R926	1-216-041-00	METAL CHIP	470 5% 1/10W
R699	1-216-121-91	METAL GLAZE	1M 5% 1/10W	R927	1-216-033-00	METAL CHIP	220 5% 1/10W
R700	1-216-061-00	METAL CHIP	3. 3K 5% 1/10W	R928	1-216-121-91	METAL GLAZE	1M 5% 1/10W
R701	1-216-073-00	METAL CHIP	10K 5% 1/10W	R929	1-216-057-00	METAL CHIP	2. 2K 5% 1/10W
R702	1-216-065-00	METAL CHIP	4. 7K 5% 1/10W	R931	1-216-017-91	METAL GLAZE	47 5% 1/10W
R703	1-216-073-00	METAL CHIP	10K 5% 1/10W	R932	1-216-017-91	METAL GLAZE	47 5% 1/10W
R704	1-216-073-00	METAL CHIP	10K 5% 1/10W	R933	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R705	1-216-065-00	METAL CHIP	4. 7K 5% 1/10W	R934	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R706	1-216-073-00	METAL CHIP	10K 5% 1/10W	R935	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R707-709	1-216-033-00	METAL CHIP	220 5% 1/10W	R936	1-216-073-00	METAL CHIP	10K 5% 1/10W
R710	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R937	1-216-073-00	METAL CHIP	10K 5% 1/10W
R711	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R938	1-216-097-91	METAL GLAZE	100K 5% 1/10W
R712	1-216-073-00	METAL CHIP	10K 5% 1/10W	R939-941	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R713	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R942	1-216-121-91	METAL GLAZE	1M 5% 1/10W
R714	1-216-073-00	METAL CHIP	10K 5% 1/10W	R943	1-216-057-00	METAL CHIP	2. 2K 5% 1/10W
R720-723	1-216-041-00	METAL CHIP	470 5% 1/10W	R944	1-216-049-91	METAL GLAZE	1K 5% 1/10W
R725	1-216-073-00	METAL CHIP	10K 5% 1/10W	R945	1-216-017-91	METAL GLAZE	47 5% 1/10W
R726	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R946	1-216-065-00	METAL CHIP	4. 7K 5% 1/10W
R727	1-216-097-91	METAL GLAZE	100K 5% 1/10W	R947	1-216-061-00	METAL CHIP	3. 3K 5% 1/10W
R728	1-216-121-91	METAL GLAZE	1M 5% 1/10W	R948	1-216-033-00	METAL CHIP	220 5% 1/10W
R729	1-216-073-00	METAL CHIP	10K 5% 1/10W	R950	1-216-017-91	METAL GLAZE	47 5% 1/10W
R730	1-216-073-00	METAL CHIP	10K 5% 1/10W	R1004	1-216-041-00	METAL CHIP	470 5% 1/10W
							< RELAY >
R801	1-216-037-00	METAL CHIP	330 5% 1/10W		RY601-604		
R802	1-216-029-00	METAL CHIP	150 5% 1/10W		1-755-061-11	RELAY	
R803	1-216-105-91	METAL GLAZE	220K 5% 1/10W				< SWITCH >
R804	1-216-089-91	METAL GLAZE	47K 5% 1/10W				
R805	1-216-089-91	METAL GLAZE	47K 5% 1/10W	S101	1-762-175-11	SWITCH, SLIDE (LEVEL dB)	
R806	1-216-073-00	METAL CHIP	10K 5% 1/10W	S102	1-762-175-11	SWITCH, SLIDE (LEVEL dB)	
R807	1-216-057-00	METAL CHIP	2. 2K 5% 1/10W				< TRANSFORMER >
R808	1-216-025-91	METAL GLAZE	100 5% 1/10W				
R901-904	1-216-033-00	METAL CHIP	220 5% 1/10W	T901	1-423-800-11	TRANSFORMER, PULSE	
R905	1-216-017-91	METAL GLAZE	47 5% 1/10W	T902	1-423-800-11	TRANSFORMER, PULSE	

The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque  sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

MAIN **PRIMARY** **VOL**

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	
< VIBRATOR >								
X301	1-760-032-11	VIBRATOR, CRYSTAL (48.6MHZ)		△55	1-762-363-11	SWITCH, POWER (POWER)		
X601	1-579-358-11	VIBLATOR, CRYSTAL (10MHZ)		56	1-537-770-21	TERMINAL BOARD, GROUND		
X603	1-567-098-41	VIBRATOR, CRYSTAL (32.768KHZ)		△58	1-551-812-11	CORD, POWER (US, Canadian)		
X901	1-567-908-11	VIBRATOR, CRYSTAL (12.288MHZ)		△58	1-590-910-11	CORD SET, POWER (AEP, Australian)		

*	1-656-690-11	PRIMARY BOARD	*****	59	1-533-293-11	FUSE HOLDER		
< CAPACITOR >								
△C1	1-161-744-51	CERAMIC	0.01uF	400V	* 63	1-690-057-11	LEAD (WITH CONNECTOR) (2 CORE)	
△C2	1-161-742-00	CERAMIC	0.0022uF	20%	68	1-500-278-11	FILTER, CLAMP (FERRITE CORE)	
△C3	1-161-742-00	CERAMIC	0.0022uF	20%			(US, Canadian)	
△C4	1-161-742-00	CERAMIC	0.0022uF	20%	△CNJ1	1-580-375-21	INLET 3P (AC IN~)	
△C5	1-161-742-00	CERAMIC	0.0022uF	20%	△F801	1-532-215-00	FUSE, TIME-LAG (T0.8A 250V)	
							(AEP, Australian)	
△C6	1-161-742-00	CERAMIC	0.0022uF	20%	△F801	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	
							(US, Canadian)	
				△F802	1-532-215-00	FUSE, TIME-LAG (T0.8A 250V)		
					△F802	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	
					△F803	1-532-215-00	FUSE, TIME-LAG (T0.8A 250V)	
						△F803	(AEP, Australian)	
						1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)	
							(US, Canadian)	
				△F804	1-532-215-00	FUSE, TIME-LAG (T0.8A 250V)		
							(AEP, Australian)	
				△F804	1-532-739-11	FUSE, GLASS TUBE (0.8A 125V)		
					LCD501	1-810-771-11	DISPLAY PANEL, LIQUID CRYSTAL	
△LF1	1-421-915-11	COIL, LINE FILTER		△T1	1-429-097-11	TRANSFORMER, POWER (US, Canadian)		
< SWITCH >				△T1	1-429-098-11	TRANSFORMER, POWER (AEP, Australian)		
△S1	1-762-363-11	SWITCH, POWER (POWER)		*****				
△S2	1-570-173-11	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR)		*****				

*	1-656-694-11	VOL BOARD	*****	*****				
< CONNECTOR >								
* CN102	1-564-522-11	PLUG, CONNECTOR 7P		1-551-812-11	CORD, POWER (US, Canadian)			
* CN104	1-564-521-11	PLUG, CONNECTOR 6P		1-590-910-11	CORD SET, POWER (AEP, Australian)			
< VARIABLE RESISTOR >				3-703-450-01	INSTRUCTION			
RV101	1-241-170-11	RES, VAR, CARBON 20K/20K (INPUT)				(ENGLISH/FRENCH)	(US, Canadian)	
RV102	1-237-306-11	RES, VAR, CARBON 10K/10K (OUTPUT)		3-798-760-11	MANUAL, INSTRUCTION		(ENGLISH, FRENCH, DANISH)	
*****				3-798-784-11	GUIDE (ENGLISH, FRENCH, DANISH)			
< VARIABLE RESISTOR >				3-798-785-11	LIST, PRESET MEMORY			
				*	4-941-101-01	CUSHION (L)		
				*	4-941-102-01	CUSHION (R)		
				*	4-950-766-01	LABEL, FCC DIGITAL DEVICE (US, Canadian)		
*****				*****				

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Replace only with part number specified.

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Ne les remplacer que par une pièce portant le numéro spécifié.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
***** HARDWARE LIST *****			
#1	7-682-547-09	SCREW +BV 3×6, S TIGHT	
#2	7-682-247-09	SCREW +K 3×6	
#3	7-682-548-09	SCREW +BVT 3×8 (S)	
#4	7-621-255-35	SCREW +P 2×5	
#5	7-621-284-10	SCREW +P 2.6×5	
#6	7-621-771-06	SCREW, LOCK	
#7	7-621-849-00	SCREW, TAPPING	
#8	7-682-661-01	SCREW +PS 4×8	
#9	7-685-646-79	SCREW +BVTP 3×8 TYPE2 N-S	

DPS-V77

SONY®

SERVICE MANUAL

*US Model
Canadian Model
AEP Model
Australian Model*

CORRECTION-1

Correct your service manual as shown below.

Subject: CORRECTION OF PARTS LIST

(RPC-97001)

 : indicates corrected portion.

Page	INCORRECT	CORRECT
	<u>Ref. No.</u> <u>Part No.</u> <u>Description</u>	<u>Part No.</u> <u>Description</u>
57	X901 1-567-908-11 VIBRATOR, CRYSTAL (12.288MHz)	 1-567-90Z-11 VIBRATOR, CRYSTAL (12.288MHz)